DOCUMENT RESUME

ED 270 056 HE 019 371

AUTHOR	Krakower, Jack Y.
TITLE	Assessing Organizational Effectiveness: Considerations and Procedures.
INSTITUTION	National Center for Higher Education Management Systems, Boulder, Colo.
SPONS AGENCY	National Inst. of Education (ED), Washington, DC.
PUB DATE	Jul 85
CONTRACT	400-83-0009
NOTE	161p.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	*College Administration; *College Environment; *Evaluation Criteria; *Evaluation Methods; *Institutional Characteristics; Objectives; Organizational Climate; *Organizational Effectiveness; Postsecondary Education

ABSTRACT

The dimensions of effectiveness pertinent to postsecondary institutions are discussed, along with approaches for assessing effectiveness. A paradigm of effectiveness is presented, based on six concerns: whose perspective is taken; assessment criteria, the referent for judging effectiveness, level and unit of analysis, time frame, and types and sources of data. The effectiveness framework incorporates criteria concerning: goal achievement, managerial functions, organizational climate, and environmental adaptation. Criteria for goal achievement outcomes concern: economics; human characteristics; knowledge, technology, and art form; and resource and service provision. Managerial process criteria concern: planning, organizing, directing, control, and staffing. Organizational climate criteria include the categories of autonomy, structure, reward orientation, educational climate, and socialization and motivation, while environmental adaptation criteria include the categories of efficiency, productivity, and bargaining position. Included is a compendium of measures, which identifies indicators and measures to assess effectiveness for each criteria, which is referenced by codes. A total of 410 indicators are covered. An eight-page bibliography and information on the competing values approach of assessing effectiveness models and criteria are appended. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

HE

P1-9

ED270056

ASSESSING ORGANIZATIONAL EFFECTIVENESS: CONSIDERATIONS AND PROCEDURES

Jack Y. Krakower

Organizational Studies Division

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

NCHEMS

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

HE 019 371

National Center for Higher Education Management Systems
P.O. Drawer P Boulder, CO 80302

ASSESSING ORGANIZATIONAL EFFECTIVENESS:
CONSIDERATIONS AND PROCEDURES

Jack Y. Krakower
National Center for Higher Education Management Systems
P.O. Drawer P
Boulder, CO 80302
(303) 497-0352

July 1985

The research reported here was supported by a contract (#400-83-0009) from the National Institute of Education.

Table of Contents

Page

Section 1--Introduction. 1

Section 2--Effectiveness, Excellence, Quality, and Performance. 7

Section 3--Organizational Effectiveness. 19

Section 4--An Effectiveness Paradigm 23

Section 5--Domains of Effectiveness. 34

Goal Achievement 41

Managerial Processes 59

Organizational Climate 66

Environmental Adaptation 79

Bibliography 91

Appendices 1-6

Assessing Organizational Effectiveness: Considerations and Procedures

Section 1

Introduction

Sitting in his spartan little office, the NCHEMS researcher looks painfully at his ringing telephone. He is certain this is another administrator looking for insight, if not answers, concerning what should be assessed to determine if their organization is effective. The researcher recalls what happened the last time he tried to respond to such a question.

He started talking about the complexity of problem, about the role different constituencies play in determining the focus, and about how the same data can be used to inform many different questions, and ... it took about five minutes. The president broke in and said, "Look, I don't want to deal with all that. I just want to assess our effectiveness." He had learned not to start over. He understood that practitioners want answers, and that they don't have time and/or want to hear about the complexity of the problem. Unfortunately, neither the notion of effectiveness, nor its assessment is simple.

This study is concerned with identifying the dimensions of effectiveness that are pertinent to postsecondary institutions, and the means of assessing them. The reader will find information about criteria that can be employed to assess effectiveness, reasons for choosing them, standardized measures and indicators for assessing them, and other factors critical to assessment.

For better or worse, this work will not provide a prescription or formula that, if followed, guarantees successful assessment. Rather, it is more like a tourist's guide-book that describes where you might want to go, and provides a map for determining the many ways you can get there. However, the decision as to where you go, and how you get there remains in your hands. The two things that you can be sure of are that (1) you are not traveling alone, and (2) whatever you decide, you are not going to satisfy everyone traveling with you.

Effective Organizations and Effective Automobiles

The term effectiveness is used so often, surely we all must know what it means? In fact, this may be the case, but this is not to suggest that our approaches to defining effectiveness are necessarily shared. Just as most western religions were borne of different interpretations of the Bible, effectiveness has many different minions, some of which are in conflict. The complexity of the construct and the problems associated with it can be illustrated by developing an analogy between evaluating effectiveness at the organizational level and evaluating the effectiveness of an automobile.[1]

---

[1] We recognize that people seldom, if ever, talk about the effectiveness of an automobile. However, we believe that the comparison provides insight into the problem at hand.

For example, first we establish the "point of view." That is, the concerns of a typical consumer are likely to be very different from those of an automobile manufacturer, a loan officer at a bank, an automobile mechanic, or an environmentalist. Subsequent considerations will be a function of the needs, preferences, and values of whoever's point of view is being considered.

Similarly, in a university, there are many constituents whose points of view differ. One example is class scheduling. Students may prefer midday classes, while teachers find morning hours ideal. Administrators, on the other hand, may prefer to schedule classes throughout the day. Effectiveness is based on meeting preferences of the individual constituent groups, but some of the preferences clearly conflict.

Another dimension of evaluating effectiveness identifies the criteria to be employed. For example, some consumers may primarily be concerned about how an automobile looks, what it says about their status, state of the art technology, or how fast a car can accelerate from zero to sixty miles per hour. Others may be concerned about cost, efficiency, maintenance, resale value, or ability to operate under winter or mountainous conditions. If the consumer is a tradesman, he/she may be concerned about such things as structure, load capacity, and the ability to meet the needs of a growing business.

An educational organization also may attract members who reflect differences in establishing criteria of effectiveness. Some students may enroll to satisfy a concern for status, while others seek low tuition. Others may be attracted because the organization offers a particular course of study or set of faculty. All of these examples of student criteria suggest that effectiveness will be differentially applied based on what the educational consumer considers important.

Third, once a decision has been made on what criteria are pertinent, we must determine how to measure them. For example, if we are concerned about efficiency, should we assess cost in terms of the sticker price of the car; amortized costs over three, five, or eight years; and/or include maintenance costs. We note that economists actually distinguish between five different types of efficiency: production, technical, price, preference, and exchange.

Similarly, if efficiency in higher education is believed to be a high quality education at a low cost, how should we measure these factors? Quality can be measured by faculty interest in education, source and level of faculty degrees, student contact hours, or small class size (to name a few). Does least cost include tuition, or are there other costs that should be considered such as fees, housing, or opportunities lost?

Having made these decisions, we must recognize that there are probably criteria that members of each of these consumer groups should have employed that were ignored. Consumers primarily concerned with the extent to which a vehicle meets their status or image-needs may find themselves in a vehicle that looks terrific, but is structurally unsound, or, that is simply too expensive to maintain. The consumer primarily concerned with cost and efficiency may find that his spouse is about to leave him because she was not consulted. The tradesman may find a given vehicle ideally suited to the demands of his job, but discovers that he/she can't afford to make the payments when business is slow.

The same set of multiple, implicit criteria for assessing effectiveness are also applicable to higher education. Faculty whose main interests are teaching may also experience pressure to publish, finding that the two activities are not always complementary. The issue then becomes one of how to balance differing requirements for becoming effective.

In summary, this analogy suggests that all of the multiple and competing dimensions of effectiveness that contribute to evaluating ownership of an automobile are also present in organizations of higher education. However, as these examples suggest, individual consumer decisions pertinent to auto ownership are multiplied at the organizational level to include many more participants and criteria for evaluating effectiveness.

The following work suggests that managing the assessment of effectiveness in organizations begins with understanding that definitions of effectiveness depend on the evaluator's point of view. Moreover, criteria for assessing effectiveness depend not only on point of view, but also on multiple and competing individual preferences and choices. Finally, although organizational managers may be able to identify multiple points of view and the criteria applicable to assessing effectiveness based on those points of view, an additional issue is how to measure effectiveness.

Issues pertinent to assessing effectiveness are the focus of this work. Accordingly, subsequent sections describe how effectiveness has been viewed, isolate four evaluative domains of effectiveness based on existing views, and use those four domains and their criteria to categorize and identify instruments that measure many dimensions of effectiveness in higher education organizations.

Section 2

Effectiveness, Excellence, Quality, and Performance

Effectiveness has been equated with quality and excellence. Some have gone so far as to equate it with something so banal as performance. "Performance," the dictionary (Webster, 1981) informs us, is the "execution of an action; something accomplished." Certainly quality and excellence must entail something more than simple action? Can effectiveness really encompass such broad interpretations? In hopes of answering these questions we shall provide a brief review of research that addresses, and hence may lend insight into, effectiveness, quality, excellence, and performance in postsecondary education.

A dictionary provides information about the meanings and interpretations of particular subjects. We could argue that the ERIC (Educational Resources Information Center) database can be used for the same purpose. That is, one can use the database to identify all the research related to a particular subject (for example, organizational effectiveness) and thereby gain insight into its interpretations and meanings.

A search of the ERIC database for the years between 1966 and 1985 yields more than 1200 entries for the descriptor "organizational effectiveness." Restricting the search to a combination of "organizational effectiveness" and "colleges" produces more than 300 entries. The articles identified in the restricted search focus on topics that include: public policy and college management; outcomes research; student involvement, learning, and development; assessing social and economic benefits to the community; relationships between state colleges and state and local agencies; structuring the institution for improved effectiveness; power, motivation, leadership style, and managerial effectiveness; collective bargaining; administrative malpractice; management by objectives; increasing productivity; renewal; organizational development; innovation.

Expert Opinion

Richard E. Peterson developed both the Institutional Functioning Inventory (Educational Testing Service), and the Institutional Goals Inventory (Educational Testing Service). These instruments have been used by hundreds of institutions as a means of gathering information that could be used for institutional planning, self-study, accreditation, and evaluation. In articles discussing the assessment of effectiveness, Peterson (1971, p. 15) writes,

> I would like to think that "effectiveness" and "quality" mean the same, that an institution that is effective according to one or more of the criteria to be outlined [student learning; student values development; programmatic responsiveness; campus morale], also has quality or is of high quality.

Peterson and Vale (1973, p. 1) reiterate this theme:

> How might institutional "effectiveness" or institutional "quality" be defined? In a recent special report, the Carnegie Commission on Higher Education (1973) stressed the notion of "value added:"

> The quality of an institution should be determined by what it does for the students it enrolls, not by the characteristics of its entering students...(p. 39).

> Thus, the fundamental index of institutional quality/effectiveness for most colleges and universities would be how much the student learns or otherwise develops as a result of attending the institution...Effectiveness, as it is discussed here, is defined (only) with reference to goals; institutional effectiveness (quality) mean in short, achievement of institutional goals.

Richard I. Miller is a consultant of national reputation whose expertise is the assessment of institutional performance. In one of the many books he has written on assessing performance, he writes (1979, p. 6):

> In attempting to define quality, we can easily be distracted by the great diversity among postsecondary institutions, forgetting all they have in common. For instance, all obviously have students, faculty members, administrators, alumni. They share certain curricular features...All are guided by some policies and procedures; all have some politics to cope with; all have some type of evaluation...And of course they share one primary goal--educating students.

He goes on to argue that while the goals, policies, and programs, and so on, are arranged uniquely in each institution, "high quality" colleges and universities also have some more specific characteristics in common:

> Their members have reached general agreement on where they want to go, how their limited resources can be employed in making progress toward goals, and whether they are moving toward where they want to go. Their academic programs contribute to the students' ability to think clearly, communicate effectively, act wisely, discriminate among values and progress toward career aspirations. Their faculty members are on the growing edge of their academic fields,

> seeking new ideas, materials, and approaches to improvement; they work closely with students in formal and informal teaching and learning circumstances; and they participate meaningfully in institutional governance. Their administrators exercise dynamic, and sometimes courageous, leadership in helping to make crucial decisions about the institution's future, and they use human and material resources prudently in accordance with established goals and objectives. And finally, the trustees of high-quality colleges and universities support their institutions while serving as friendly critics, provide policy direction, differentiate between policy development and operational procedures, and evaluate institutional effectiveness (p. 6).

Miller then argues that whether or not one agrees that a high quality institution would have all the characteristics cited above, it is clear that an assessment of its quality cannot be based on a single indicator or even a cluster of similar indices. He goes on to identify ten areas and 45 evaluative criteria that evaluators might examine in assessing institutional quality. These are shown in Table 1.

Miller concludes his discussion of quality by noting that, "in the final analysis, the validity of any criteria of institutional quality is a matter of judgment." He then quotes from Allan Carter (1966, p. 4):

> Quality is an elusive attribute, not easily subjected to measurement...In the operational sense, quality is someone's subjective judgement, for there is no way of objectively measuring what is in essence an attribute of value.

While Miller's and Carter's point regarding the subjective aspect of quality is not new, it is extremely important and a fundamental theme of this work. Every discussion or argument concerning what constitutes effectiveness, quality, and/or

Table 1
Institutional Evaluation Criteria
from Richard I. Miller, 1979, p.7-10

Goals and Objectives

1. The goals statement serves as an effective guide for the present and future.

2. Objectives reinforce goals.

3. The institution has adequate planning capabilities.

4. Institutional admissions policies and procedures are consistent with institutional goals and objectives.

5. The institution's goals and objectives help it maintain a reasonable identity within a statewide system of institutions.

Students' Learning

6. Students give a good rating to their advising and counseling system.

7. Retention rates are reasonable.

8. An array of individualized and compensatory learning resources is available.

9. The student affairs administration is effective.

10. Satisfactory progress is evident toward learning goals.

Faculty Performance

11. Current policies and procedures for evaluating individual faculty members are satisfactory.

12. Current instructional improvement/faculty development programs serve their purposes.

13. Faculty personnel policies and procedures are considered satisfactory.

14. Faculty salary sales and fringe benefits are competitive.

15. The overall quality of the faculty's performance is optimal.

Academic Programs

16. The institution has effective policies and procedures for developing new programs.

17. The institution has effective policies and procedures for the review and evaluation of existing programs.

18. The general education component is an intellectually stimulating and integral part of the curriculum.

19. The quality and size of the graduate program are consistent with institutional goals and objectives.

20. The library or learning resources center provides good service to the academic community.

Institutional Support: Services

21. The physical plant and facilities are adequate for the size of the student body and for the nature of the academic program.

22. The institution has a relevant and current long-range plan for developing and maintaining its physical plant.

23. Salaries and other benefits for support personnel are sufficient to attract and retain competent individuals.

24. Systematic procedures are used for evaluating the performance of support personnel.

Administrative Leadership

25. The administration gives adequate attention to planning.

26. The chief campus administrator and his team have effective working relationships with other campus administrators.

27. Institutional governance policies and procedures allow for effective institutional management.

28. The policies and procedures established for administrative evaluation and for professional development are satisfactory.

29. The institution has an effective affirmative action program.

Financial Management

30. The tuition and fee structure is compatible with the institution's needs and with the students' capacity to pay.

31. The institution has an efficient management system for accounting and financial reporting.

32. Costs and expenditures are comparable with benchmark institutions.

33. The investment portfolio is well managed.

34. The institution has an effective system for demonstrating its accountability.

Governing Board

35. The policies and procedures for conducting board affairs are satisfactory.

36. Trustees understand the differences between policy formulation and policy implementation and apply this knowledge.

37. The governing board works effectively with external constituencies.

38. The board contributes positively to improving the institution.

External Relations

39. The institution's activities contribute to the quality of life in its primary service area.

40. The institution has effective relationships with the state higher education (ccordinating or governing) office.

41. The institution has an effective relationship with the federal government.

42. The institution is able to secure acceptable levels of funding from private sources and foundations.

Institutional Self-Improvement

43. The institution seeks improvement through innovation and experimentation.

44. Campus groups have positive attitudes toward self-improvement.

45. The institution has established procedures for evaluating its own effectiveness.

excellence is based on someone's values. We shall return to this point many times in the discussion that follow.

Peter Ewell is a recognized authority in the field of higher education on the subject of educational outcomes. Hence, it is no surprise that when he talks about "excellence" in postsecondary education his judgments rest on the achievement of educational outcomes. His "prejudice," at least from this writer's perspective, is eloquently expressed by an excerpt from his book, Dimensions of Excellence in Postsecondary Education (1985, p. 1):

> On the one hand, excellence is judged in terms of particular sets of standards--available resources, the structure of programs and curricula, and the intellectual characteristics and attainment of faculty and students. This has been a theme most particularly evident in the process of postsecondary accreditation. On the other hand, these sets of standards are taken to be indicative of an underlying process. High levels of resources, well-structured programs, and an able faculty and student body are assumed to be highly correlated with educational growth. They are largely valued because of the perceived increments of educational growth they are believed to produce.
>
> The argument will be made that institutions achieve "excellence" in postsecondary education in so far as they produce demonstrable changes along dimensions consistent with (1) institutional objectives, (2) student educational growth, and (3) the expressed needs of society and particular constituencies within society.

Reputational Ratings

The desire for national recognition as a "quality" institution or department influences the decisions made in a number of colleges. One measure of quality that is seriously attended to by many colleges and departments are reputational ratings. The examination of how such indices are generated may, accordingly, further enlighten us on the attributes of a quality institution.

In an article entitled, "Are Reputational Ratings Needed To Determine Quality," Astin and Solomon (1981) conclude that measures of prestige and selectivity proved to have substantial correlations with mean ratings of the "overall quality" of undergraduate education. Quality, for purposes of this study, was defined in terms of peer ratings on six dimensions: (1) the scholarly and professional accomplishments of the faculty, (2) faculty commitment to undergraduate teaching, (3) overall quality of the undergraduate education in their fields, (4) preparation of students for graduate or professional schools, (5) preparation of students for employment after college, and (6) innovativeness of curriculum and pedagogy.

Accreditation

Reason would suggest that any institution which is "effective," must almost certainly be "accredited." (However, we are not prepared to argue that the reverse is true.) Acceptance of this premise suggests that we might gain further insight into what constitutes institutional effectiveness by reviewing what is evaluated in order to earn accreditation. Richard M. Miller (1983, p. 35) argues that,

> The crucial question for accreditation is not how one institution or program compares with another but how effectively the institution or program meets its own educational objectives...What accreditation attests to is

> that an institution or program has clearly defined and educationally appropriate objectives, that it maintains conditions under which their achievement can be reasonably expected, that it appears in fact to be accomplishing them substantially, and that it can be expected to continue to do so.

Robert Chambers (1984), offers the following list of areas (taken from criteria established by the Middle States Association of Colleges and Schools) as examples of what is examined in judging whether an institution should be accredited:

1. The institution's mission, goals, and objectives;
2. Its program and curricula for fulfilling these;
3. The "outcomes" it achieves (its current effectiveness) and hopes to achieve (its aspirations);
4. Its admissions policies, efforts, and results;
5. The services it provides its students once they are on campus;
6. The role of its faculty in serving a school's stated mission and meeting its students' needs;
7. Its administrative organization for facilitating teaching and learning;
8. The role of its governing board (trustees) in ensuring that the announced mission and goals are fulfilled;
9. Its accounting, budgeting, and accounting policies and practices;
10. Its library, and other learning resources, including computings role in meeting the published objectives;
11. The adequacy of its plant and equipment;
12. Its catalogues, other publications, and general public relations posture;
13. Its openness to innovation, experimentation, and future growth.

Conclusion

A colleague reviewed a draft of the preceeding materials. He offered a comment and a question. Both dealt with the attempt to demonstrate that it is extremely difficult to differentiate between effectiveness, quality, excellence, and performance. The comment is probably best left unrepeated. However, it may be useful to pursue his question.

He remarked, "Are you arguing that there is no difference between an "effective" institution, and a high "quality" institution? If this were true, and I don't believe it is, then there are a great many students paying for an Ivy League education when they might do just as well at their local state college."

Our response was yes, and no. If your criterion of effectiveness is achievement of objectives then a state college might be just as effective as an Ivy League school. The state college might even be more effective. Certainly, there are other effectiveness criteria one could employ such that the state college came out at the bottom of the pile--for example, selectivity, library resources, or research grants.

However, irrespective of whether one is talking about effectiveness, quality, or excellence, the criteria and standard used to judge them will be subjective. More precisely, **both the focus and judgment of effectiveness is a function of individual needs, preferences, and values.** If I want to be trained as an auto mechanic, then an Ivy League school is worthless to me. If I want to be a scholar, then I must go to an institution that supports and rewards such efforts. If I am a legislator confronted with the decision of providing financial support to the Ivy League or the state school, then I better know what my constituents want and are willing to pay for.

Hopefully, the previous discussion has shown that if three people were asked to describe how they would judge whether an organization was effective, they, like the blind men asked to describe an elephant, might appropriately note very different characteristics. The discussion that follows provides a framework for understanding and evaluating most of the criteria that have been discussed with respect to organizational effectiveness.

Section 3

Organizational Effectiveness

One might forgive the literature in higher education for being imprecise with respect to its treatment of effectiveness. Unfortunately, the perspective from organizational theory, a domain that willingly takes credit for inventing the construct, provides little practical insight or guidance for dealing with effectiveness. The literature that flows from organizational theory seems primarily concerned with three issues. First, to describe why the problem is so complicated. Second, to explain why previous attempts to deal with the problem have been unsatisfactory. And, third, to offer unique alternatives that inevitably suffer from the same type of problems that these alternatives purport to solve.

Most articles on organizational effectiveness written in the last ten years begin with a review and criticism of two views of effectiveness: goal centered and natural systems. Goal centered views (Etzioni, 1964; Georgopolous and Tannenbaum, 1957; Hall, 1978; Price, 1968), which include such variants as Management By Objectives (Odiorne, 1965; Humble, 1970) and Cost/Benefit Analysis (Hitch, 1965; Rivlin, 1971), assume:

> ...the organization is in the hands of a rational set of decision makers who have a set of goals in mind which they wish to pursue. Further, these goals are few enough in number to be manageable and can be defined well enough to be understood. Given that the goals can be thus identified it should be possible to plan the best management strategies for attaining them. Within this orientation the way to assess

organizational effectiveness would be to develop criterion measures to assess how well the goals are being achieved.[1]

Goal centered models are usually criticized on the grounds that there is a wide difference between espoused public goals and the goals that are in fact pursued; that organizations often have multiple, contradictory goals; that in many cases goals must not be reached or the acquisition of resources would no longer be justified; that goals are often post hoc justifications of what is already going on (Faerman & Quinn, 1985, p. 1).

The natural systems view, which incorporates such variants as the Systems Resource (Seashore and Yuchtman, 1967) and Open Systems (Etzioni, 1964) models, make the assumption that:

> ...if an organization is of any size at all the demands placed upon it are so dynamic and so complex that it is not possible to define a small number of organizational goals in any way that is meaningful. Rather, the organization adopts the overall goal of maintaining its viability or existence through time without depleting its environment or otherwise fouling its nest. Thus to assess an organization's effectiveness one shoud try to find out if an organization is internally consistent within itself, whether its resources are being judiciously distributed over a wide variety of coping mechanisms, whether its using up its resources faster than it should, and so forth.[2]

A major criticism of this view is that it implicitly uses goals, even though the models which incorporate this view strongly criticize goal based models. In addition, models which incorporate this view seldom describe what appropriate coping mechanisms are, or how to operationally assess efficiency and the judicious use of resources.

---

[1] John P. Campbell, David A. Bownas, Norman G. Peterson, and Marvin D. Dunnette. The Measurement of Organizational Effectiveness: A Review of Relevant Research and Opinion, 1974, p. 6.

[2] Ibid, p. 6.

Reviewing a score of articles dealing with the assessment of organizational effectiveness, Cameron (1978, p. 604) observes:

> Difficulty in assessing organizational effectiveness has arisen because no one ultimate criterion of effectiveness exists. Instead organizations may pursue multiple and often contradictory goals (Warner, 1968; Perrow, 1970; Hall, 1972 1978; Dubin, 1976), relevant effectiveness criteria may change over the life cycle of an organization (Yuchtman and Seashore, 1967; Kimberly, 1976; Miles and Cameron, 1977), different constituencies may have different importance at one time or with regard to organizational aspects and not others (Friedlander and Pickle, 1968; Scott, 1977; Barney, 1978), criteria at one organization level may not be the same as those at another level (Price, 1972; Weick, 1977), and the relationships among various effectiveness levels may be difficult to discover (Seashore, Indik, and Georgopolous, 1960; Mahoney and Weitzel, 1969; Kirchoff, 1975). In short, organizational effectiveness may be typified as being mutable (composed of different criteria at different life stages), comprehensive (including a multiplicity of dimensions), divergent (relating to different constituencies), transpositive (altering relevant criteria when different levels of analysis are used), and complex (having nonparsimonious relationships among dimensions).

The problems associated with assessing organizational effectiveness may be summarized by six questions (Cameron, 1978; Steers, 1977, Faerman and Quinn, 1985):

> (1) whose perspective should dominate the assessment of organizational effectiveness (e.g., organizational members, external resource providers, dominant coalitions, etc.);
>
> (2) what is the appropriate level of analysis (e.g., organization level, organizational subunits, individual, etc.);
>
> (3) what are the appropriate types or sources of data (e.g., organizational records, perceptual measures, researcher observations, etc.);

(4) what should be the appropriate time frame (i.e., long-term vs. short-term effectiveness); and

(5) what is the referent against which effectiveness is to be assessed (i.e., is there a norm or standard, is the organization being compared to other organizations, to itself, etc.).

The sixth and most obvious (but not necessarily critical) question that must be dealt with in assessing organizational effectiveness is identification of the domain of assessment. However, in our opinion, one cannot practically address this problem until we first resolve whose perspective or preferences we are concerned about. In other words, the criteria of what constitutes an effective organization, at least in higher education, are likely to substantially differ depending on whether one is talking to state legislators, students, faculty, administrators, members of the business community, accrediting agencies, and so forth.

In the work that follows we will develop a paradigm that includes and discusses the aforementioned issues, criteria that may be used to assess effectiveness, and measures and indicators for assessing them.

Section 4

An Effectiveness Paradigm

The paradigm that follows rests on five premises. The first premise follows from the previous discussion concerning what constitutes effectiveness. The premise concerns the definition of effectiveness and its equation with performance. Webster (1981) defines "effective," the adjectival form of "effectiveness," as follows:

1a. producing a decided, decisive, or desired effect;

1b. impressive, striking;

2. ready for service or action

3. actual

4. being in effect; operative

5. producing or capable of producing a result.

We previously noted that some theorists equate effectiveness and performance. For example, Kanter and Brinkerhoff (1981, p. 322), in a seminal review of the effectiveness literature write:

> ...for the purpose of this paper we make no hard-and-fast distinctions among effectiveness, productivity, performance, and success. Rather, we look for all related measurement issues and use effectiveness and performance as general and interchangeable terms. (At the same time we acknowledge the important conceptual distinction between efficiency--"doing things right"--and effectiveness--"doing the right thing.")

Performance (Webster, 1981) is defined as:

1a. the execution of an action

1b. something accomplished: deed, feat

2. the fulfillment of a claim, promise, or request: implementation

The primary reason for suggesting that there is little difference between the notion of effectiveness and performance is because it emphasizes that (1) the focus of (effectiveness) assessment may be wide ranging--as suggested, for example, in the previous discussion concerning the attributes of effective, excellent, and quality institutions; and (2) the focus is largely determined by key constituencies to the assessment process. However, we suggest that performance in-and-of itself is essentially neutral. Only when someone's values are considered can a judgment be made regarding effectiveness.

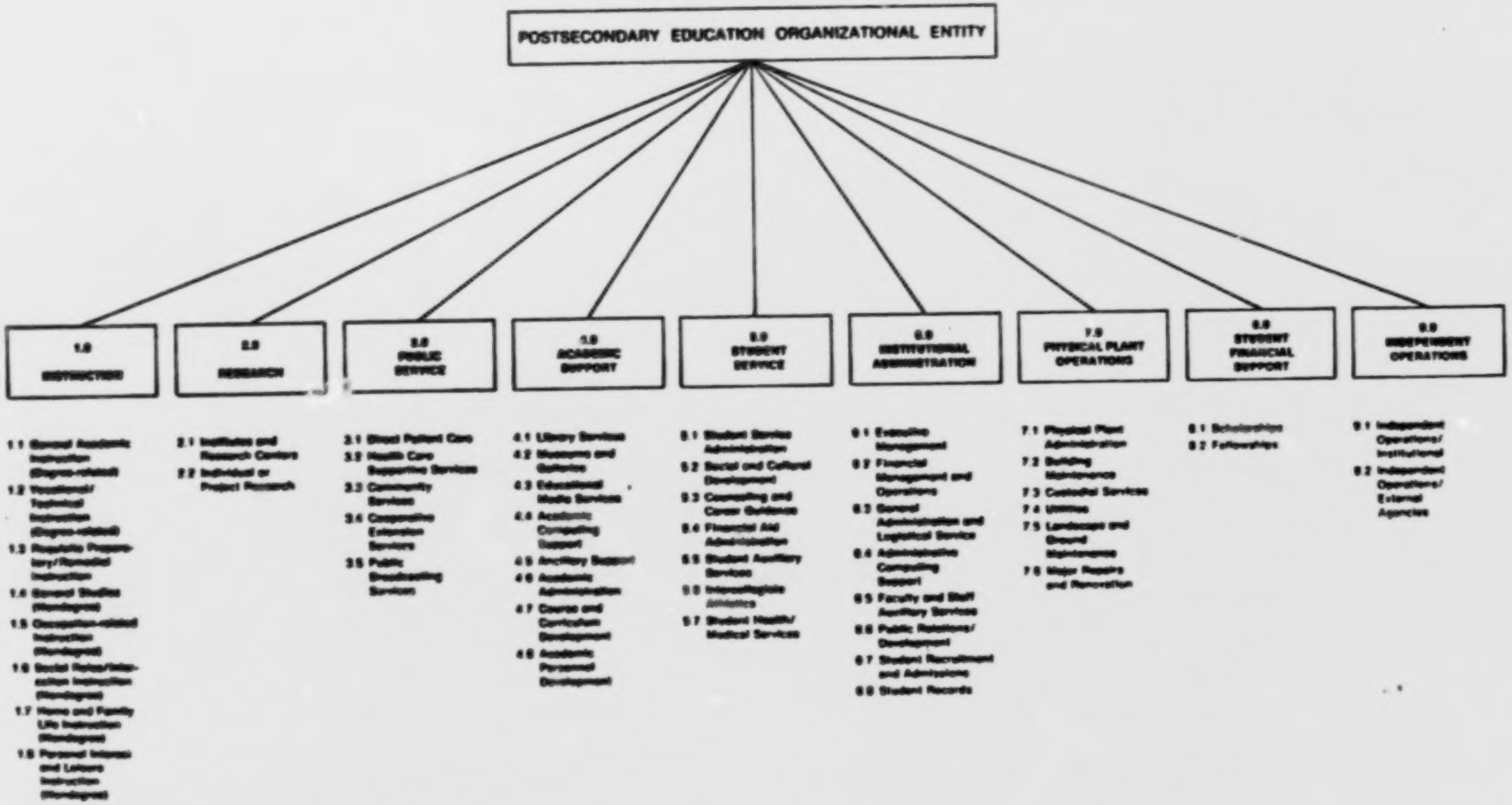
The second premise is that institutions of higher education may be viewed as being composed of the components and subcomponents shown in Figure 1. Not shown here, however, and critical to the institution are its constituents. These include, for example, faculty, students, administrators, its community, business, the state and federal government, etc. This premise serves two purposes. First, it forces us to recognize that the effectiveness of an institution may rest on judgments regarding any one or combination of its components. And second, that the criteria suggested as appropriate for assessing overall institutional effectiveness should generally be applicable to assessing any one or more of the institution's components.

The third premise follows from the previous two: the dimensions of effectiveness that are measured and how they are measured are largely a function of who is asking the questions and how they wish to use the data. This premise (1) reemphasizes the notion that organizational effectiveness is not limited in scope

Figure 1

BEST COPY AVAILABLE

**REVISED
PROGRAM CLASSIFICATION
STRUCTURE**


POSTSECONDARY EDUCATION ORGANIZATIONAL ENTITY
1.0 INSTRUCTION
2.0 RESEARCH
3.0 PUBLIC SERVICE
4.0 ACADEMIC SUPPORT
5.0 STUDENT SERVICE
6.0 INSTITUTIONAL ADMINISTRATION
7.0 PHYSICAL PLANT OPERATIONS
8.0 STUDENT FINANCIAL SUPPORT
9.0 INDEPENDENT OPERATIONS
1.1 General Academic Instruction (Degree-related)
1.2 Vocational/Technical Instruction (Degree-related)
1.3 Requisite Preparatory/Remedial Instruction
1.4 General Studies (Nondegree)
1.5 Occupation-related Instruction (Nondegree)
1.6 Social Roles/Interaction Instruction (Nondegree)
1.7 Home and Family Life Instruction (Nondegree)
1.8 Personal Interest and Leisure Instruction (Nondegree)
2.1 Institutes and Research Centers
2.2 Individual or Project Research
3.1 Direct Patient Care
3.2 Health Care Supportive Services
3.3 Community Services
3.4 Cooperative Extension Services
3.5 Public Broadcasting Services
4.1 Library Services
4.2 Museums and Galleries
4.3 Educational Media Services
4.4 Academic Computing Support
4.5 Ancillary Support
4.6 Academic Administration
4.7 Course and Curriculum Development
4.8 Academic Personnel Development
5.1 Student Service Administration
5.2 Social and Cultural Development
5.3 Counseling and Career Guidance
5.4 Financial Aid Administration
5.5 Student Auxiliary Services
5.6 Intercollegiate Athletics
5.7 Student Health/Medical Services
6.1 Executive Management
6.2 Financial Management and Operations
6.3 General Administration and Logistical Services
6.4 Administrative Computing Support
6.5 Faculty and Staff Auxiliary Services
6.6 Public Relations/Development
6.7 Student Recruitment and Admissions
6.8 Student Records
7.1 Physical Plant Administration
7.2 Building Maintenance
7.3 Custodial Services
7.4 Utilities
7.5 Landscape and Ground Maintenance
7.6 Major Repairs and Renovation
8.1 Scholarships
8.2 Fellowships
9.1 Independent Operations/Institutional
9.2 Independent Operations/External Agencies

Reprinted from *Program Classification Structure—Second Edition*, by Douglas J. Collier, 1978.

to a single dimension or focus; and (2) that the focus is constituency driven.

The fourth premise concerns the meaning of "criteria of effectiveness," "indicators of effectiveness," and the relationship between them. Webster (1981) defines a criterion as "a standard on which a judgment or decision may be based." An indicator is defined as "a device that measures or records and visibly indicates."

This suggests that a "criterion of effectiveness" is something that effectiveness is contingent on, or a function of. Then, an "indicator of effectiveness," must be something that measures whatever effectiveness is contingent upon--which, by definition, is a "criterion of effectiveness." In other words, indicators of effectiveness measure how an organization stands on criteria of effectiveness.

At the same time, (1) a given measure may be used as an indicator for more than one criterion of effectiveness; and (2) a given criterion may serve more than one kind of effectiveness--logic and reason prevailing.

The fifth premise is that the paradigm should be able to incorporate any and all criteria that have been employed as standards of organizational effectiveness.

The Paradigm

The paradigm is based on six questions or issues that are essential to any assessment of effectiveness:

(1) Whose perspective are we concerned with?

(2) What is the domain or criteria of assessment?

(3) What is the referent against which effectiveness is to be judged?

(4) What is the appropriate level and unit of analysis?

(5) What should be the appropriate time frame?

(6) What are the appropriate types and sources of data?

Purely theoretical discussions of effectiveness generally raise the third question first. The logic being that the nature or characteristics of effectiveness should be one's first consideration. However, our ordering (at least with respect to the first three questions) reflects our belief that more often than not the administrator is responding to the demands of his constituencies rather than basking in their admiration for his judgments. Our ordering is intended to provide some additional insight regarding what "is" and "is not" being considered as critical by different constituencies.

Whose perspective are we concerned with?

Organizational effectiveness criteria will differ depending on whose (or which) viewpoint is taken. Clearly, what is most important to students is likely to differ from what is most important to their parents, faculty, the community, the state, and so forth.

For example, students are likely to be concerned about an institution's educational climate (e.g., its sense of community, academic emphasis, vocational emphasis, social opportunities, propriety, etc.), amenities, location, etc. Parents may be more concerned about cost, vocational emphasis, quality, religious emphasis, and so on. Faculty are likely to be more concerned about the institution's working environment (e.g., autonomy, conflict, morale, etc.), salaries, stature, etc. The State, at least with respect to public institutions, will be concerned about costs, efficiency, program duplication, etc.

We turn to Cameron (1978, p. 11) for a formal statement of the problem:

> There is general agreement that effectiveness criteria always represent someone's values and biases, but there are conflicting opinions about who should determine effectiveness criteria and who should provide data for their measurement. Some investigators advocate relying on major decision makers and directors, or the organization's "dominant coalition," to generate the criteria and to supply effectiveness information (Gross, 1968; Pennings & Goodman, 1977; Price, 1968, 1972; Yuchtman and Seashore, 1967). Others have suggested that these top administrators or managers have narrow and biased perceptions and, therefore, that a broad range of constituencies should be tapped (Katz and Kahn, 1978; Pfiffner & Sherwood, 1960; Steers, 1975). Still another group (Bass, 1952; Friedlander & Pickle, 1968; Reinhard, 1973: Scott, 1977) points out that constituencies outside the organization are relevant for criteria generation inasmuch as derived goals (Perrow, 1961), "macroquality" criteria (Reinhart, 1973), or information concerning the organization's contribution to the "supersystem" (Katz and Kahn, 1978) are obtained from that group.

What this means is that the criteria of organizational effectiveness are likely to differ as a function of who you are talking to. So, you ask, which constituents should one listen to? The answer is that you have to listen to all of them. However, it's extremely unlikely that you can satisfy all of them--especially since their demands may contradict one another.

What is the domain or criteria of assessment?

Our research suggests that most if not all the criteria that have been discussed with respect to organizational effectiveness fall into one of four domains: goal achievement, managerial processes, organizational climate, and environmental adaptation. We believe that two of the most important outcomes of the current research effort are the (1) identification of most of the criteria that have been discussed with respect to organizational effectiveness, and (2) identification/development of domains that subsume and explain them. However, since dealing with the basic question ("What is the domain or criteria of assessment?") constitutes a large part of the current research effort, we shall address this problem in a separate section.

What is the referent against which effectiveness is to be judged?

Organizational theory suggests that effectiveness criteria can be distinguished along three dimensions. One dimension is whether effectiveness criteria are normative or descriptive. A second dimension is whether criteria are static or dynamic. A third dimension is whether the criteria are universally valued.

The normative/descriptive dimension distinguishes between whether a given criterion is prescribed or derived. Prescribed criteria denote characteristics or qualities that "experts" believe organizations must/should possess in order to be effective. In the context of postsecondary education the most obvious example of normative or prescribed criteria are accreditation requirements. Derived criteria generally refer to goals set by the organization itself, rather than for the organization as in the case of prescribed criteria. However, the distinction between prescribed and derived criteria can become quite blurred since organizations can adopt prescribed criteria as goals to be valued in-and-of themselves. The interested reader will find more detailed discussions in Thompson (1967), and Steers (1977).

The static dynamic dimension reflects one's biases regarding what constitutes organizational effectiveness. Employing static criteria reflects the belief that once an organization achieves the criteria, it is effective. Examples of static criteria include meeting institutional objectives for (a) student performance on standardized tests, (b) endowment campaigns, (c) faculty perceptions of campus morale, etc., but can also include accreditation. Static criteria are generally found under the Goal Achievement and Organizational Climate dimensions of this paradigm.

Employing dynamic criteria reflects the belief that the organization is in a constant state of flux so that what's critical to effectiveness is the organization's ability to monitor and adapt to changing conditions. Examples of dynamic criteria include security from external threats, control over environment, bargaining position, flexibility, and adaptability.

The third dimension of the referent issue is whether a given criteria is held as universally valuable by everyone in an organization, or whether it is contingent on the values of a particular constituency.

What is the appropriate unit of analysis?

The unit of analysis is primarily determined by the criteria employed, which in turn is determined by the interests of key constituencies. For example, state legislators may be concerned with total institutional costs, program costs, or total costs per full-time equivalent student. Institutional managers may be concerned with institutional productivity generally, and/or with the productivity of departments considered individually. Businesses may judge an institution's effectiveness in terms of the skills of graduates from particular departments. The general effectiveness or quality of Student Services may be judged or effectiveness could be judged on the individual components--e.g., financial aid, housing, food services, health, counseling, etc.

We find a formal statement of the problem in Cameron (1978, p. 12):

> Bidwell and Kasarda (1975), Evan (1972), Hirsch (1975), and Katz and Kahn (1978) are among those who advocate relying on the supersystem or the external "organizational set" to establish effectiveness criteria (effectiveness is defined as the ability of the organization to adapt to, manipulate, or fulfill expectations of the external environment); whereas writers such as Scott (1977), Steers (1977), Webb (1974), and Weick (1977) suggest that criteria should relate to the organization as a unit (effectiveness relates to the goals, processes, or characteristics of the organization itself). Pennings and Goodman (1977) propose an approach to

effectiveness which focuses on organization subunits (organizational effectiveness is associated with the contributions of and the coordination among subunits), Argyris (1962), Kaufman (1960), Lawler, Hall, and Oldham (1974) and others focus on individual performance as criteria of organizational effectiveness (organizational effectiveness is assumed to be indicated by individual behaviors and satisfaction).

What should be the appropriate time frame?

The time frame component is concerned with the fact that we must decide whether we are concerned with short, middle, or long-term conditions. Assessment may produce very different results when applied to each of these periods--even if we employ the same set of criteria.

What are the appropriate types and sources of data?

The appropriate types and sources of data are largely driven by responses to the five previous issues. However, within this issue we must deal with three specific but interrelated questions. The first is concerned with what type of data is collected. Examples include (a) questionnaire data--institution developed, published; (b) archival records; and (c) indicators--e.g., measures of efficiency, productivity, community impact, etc. The second component concerns whether assessment data is subjective (perceptual) versus objective (empirically verifiable). And, third, when assessment data is perception-based, who are appropriate respondents--for example, students (past/present, full-time/part-time, undergraduate/graduate, etc.), department heads, faculty, trustees, heads of households, members of business and industry, transfer institutions, state and federal agencies, the military, etc.

Section 5

Domains of Effectiveness

The organizational effectiveness literature contains scores of effectiveness models--for example, the Rational Goal Model, Systems Resource Model, Cost/Benefit Analysis, Management By Objectives, Operations Research, Organizational Development, Open Systems, etc. The models generally assume that the ultimate criterion of effectiveness is the degree to which an organization realizes its goals. In the context of postsecondary education these goals generally refer to teaching, public service, and research.

However, the supporters of all but the Goal Model argue that "goal achievement" is not a viable criterion since (1) the demands placed on organizations are generally so dynamic and complex that it is not possible to define a small number of goals that are meaningful; (2) organizations and subunits within organizations can pursue multiple goals that may be in conflict with one another; (3) the relative importance of goals, let alone the goals themselves may change over time; (4) there may be significant differences between official and operative goals; (5) goal achievement is extremely difficult to measure; and (6) goal attainment is only one of the requirements that an organization must meet to be viable--e.g., it must acquire resources, implement managerial structures, etc.

The critics of the Goal Model argue that we must turn to other criteria to assess organizational effectiveness.

Ironically, these other criteria become the "goals" of an effective organization. That is, they are viewed as the criteria of an effective organization in-and-of themselves as opposed to means of achieving the ends for which the organization was established.

For example, the Systems Resource Model (Seashore and Yuchtman, 1967, p. 898) defines effectiveness in terms of an organization's ability "in either relative or absolute terms, to exploit its environment in the acquisition of scarce and valued resources." The Open Systems Model (Etzioni, 1964) defines effectiveness in terms of an organization's adaptability, efficiency, growth, resource acquistion, and external support. The Managerial Process Model (Koontz and O'Donnel, 1972) views effectiveness primarily in terms of how the organization's managers carry out their responsibilities with respect to staffing, controlling, planning, and directing. And, the Organizational Development Model (Campbell, 1974) suggests that organizational effectiveness is primarily a function of morale, cohesion, and consideration for human resources.

A review of effectiveness models suggest that the same criteria are often employed by more than one model. In addition, the same set of data may be used to measure organizational status on different criteria. For example, the Organizational Development Model holds that organizational effectiveness is contingent on high morale. At the same time, however, data on employee morale could be used as an indicator of employee satisfaction with managerial evaluation standards--a criterion of

Managerial Process models. Hence, in using a particular criterion and data we must be clear about what they are intended to measure.1

Rather than work with dozens of effectiveness models, we have chosen to identify the criteria employed by the most frequently discussed models and develop a framework that usefully incorporates them. A review of the literature suggested that most models (1) define effectiveness in terms of, and (2) employ criteria that focus on--the extent to which an organization does one of the following:

1) achieves its goals

2) performs certain managerial functions

3) fosters a supportive climate

4) adapts to its environment.

This set of domains finds a good deal of support in the literature--particularly in the Competing Values Approach developed by Quinn and Rohrbaugh (1981, 1983). However, before describing the characteristics of the dimensions and criteria included in the framework several issues need to be discussed. The first concerns the relationship between the framework and the Competing Values Model (CVM). Quite simply, the dimensions of our framework follow directly from the CVM.

---

[1] It would be easy to suggest that increasing morale might be taken as an organizational goal--whereupon, organizational effectiveness would be a function of the extent to which this goal was achieved. However, a careful reading of the literature pertaining to the Rational Goal Model suggests that its focus is concerned with macro goals of the type found in charters and mission statements. This suggests that morale is more appropriately viewed as an effectiveness criterion of one of the other effectiveness models.

The value of the CVM is that it provides insight into both the nature of, and the relationships between, different effectiveness models and criteria. The CVM suggests that most effectiveness models and criteria can be differentiated on three factors: (1) flexibility versus control, (2) internal versus external focus, and (3) means versus ends. Rather than attempt to write our own summary of the CVM, we have taken the liberty of including a summary (Appendix 1) written by Faerman and Quinn (1985). Knowledge of the CVM is not essential to using the measures and indicators reported in this document. However, knowledge of the CVM will provide the reader with useful insight about criteria and models of organizational effectiveness.

The second issue is concerned with the generic nature of the criteria included in the Compendium of Measures (Appendix 3). The Compendium identifies indicators and measures that may be used to assess an organization's status on criteria of effectiveness. Criteria were assigned to domains as a function of the primary emphasis of the models they derive from. However, for purposes of parsimony, generic categories (and labels) were employed for criteria concerned with similar if not identical underlying behaviors or conditions.

For example, the Compendium treats the criteria of morale and esprit as synonyms even though some researchers talk about organizational morale and others organizational esprit. Both are included as a single criterion under a more general criterion or construct that is referred to as "consideration and support." Other criteria included under this criterion include intimacy, aloofness, permeability, and warmth. Hence, the reader may not find the names of all the criteria associated with a particular effectiveness model in the Compendium. The behaviors underlying these criteria should, however, be represented by one of the generic criteria.

The reader may recollect that the fifth premise of the paradigm is that it must be able to incorporate any and all criteria that have been taken as indicative of organizational effectiveness. Two conditions make this a challenge. The first follows from the previously discussed need to employ generic criteria. Researchers may use different language to describe criteria that are essentially the same as those in the Compendium. That is, they are concerned with the same behaviors. Thus, the Compendium may appear to fail to include criteria deemed critical by a particular researcher when the problem is actually semantic.

The second condition follows from the fact that the Paradigm focuses on the assessment of "overall" institutional effectiveness rather than the effectiveness of particular institutional components (for example, the education department, student services, financial management, administration, etc). However, judgments of effectiveness are often based on one or more specific institutional behaviors. The challenge results from the fact that the link between a specific focus and the generic criteria is not always obvious.

However, the Compendium was specifically built to accommodate the fact that judgments of effectiveness are often based on the peformance of organizations generally, as well as the performance of individual and aggregated organizational components. Unfortunately, the reader may have to struggle with identifying the links since we have not yet identified how the focus of many specific assessments translate into the general criteria.

The Compendium is constructed so that one can select a criterion from a particular effectiveness domain and automatically know (1) how effectiveness is defined (i.e., in terms of goal achievement, managerial processess, organizational climate, or environmental adaptation), and (2) why performance on the criterion is important (i.e., because it indicates the extent to which the organization is effective vis-a-vis the (a) achievement of its goals, or (b) fostering of a supportive environment, or (c) performance of certain managerial functions, or (d) adaptation to its environment.

At the same time, however, one can employ a criterion that is commonly treated as a standard of effectiveness in one domain as a standard in other domains as long as there is a direct, logical relationship between the criterion and the new domain. That is, as long as one can explain (1) why the criterion is an appropriate standard for the domain, and (2) identify measures of the criterion that are meaningfully related to the domain being considered.

The discussion that follows is intended to serve the reader in several ways. First, it identifies most of the criteria commonly discussed as being indicative of organizational effectiveness and the kinds of effectiveness they are generally used to measure--that is, goal achievement, managerial processes, organizational climate, and environmental adaptation. Second, the Compendium reports indicators for most of the criteria that have been identified. Third, it may provide the reader with some useful insight regarding criteria and/or domains of effectiveness that have not been of concern to the reader, but that may be important to the health of your organization.

Goal Achievement

The criteria which comprise the Goal Achievement domain are generally employed by models that view or define effectiveness in terms of the extent to which an organization "achieves its goals." Goals, in this context, refer to statements that describe the general purposes of the organization such as those likely to be found in an organization's charter, mission statement, and public statements made by the organization's leaders. Perrow (1961) refers to these as the "official" as opposed to the "operative" goals of an organization. In the context of higher education these would generally pertain to such things as the education of students (teaching), research, and public service.

Campbell (1974, p. 6) describes models which define effectiveness in terms of goal achievement as follows:

> The goal centered view make a reasonably explicit assumption that the organization is in the hands of a reasonably rational set of decision makers who have a set of goals in mind which they wish to pursue. Further, these goals are few enough in number to be manageable and can be defined well enough to be understood. Given that goals can be thus identified it should be possible to plan the best management strategies for attaining them. Within this orientation, the way to assess organizational effectiveness would be to develop criterion measures to assess how well the goals are being achieved. There are a number of variations of the goal centered view. The management by objectives tradition (e.g., Odiorne, 1965, 1969) as it is usually practiced tends to fall within this category. The recently renewed movement toward cost/benefit analysis (Rivlin, 1971) is an ambitious attempt to assess the actual utility of specific goals.

Cunningham (1977, p. 465) describes the Rational Goal Model as follows:

> The rational goal approach focuses on the organization's ability to achieve its goals. Evaluation criteria are derived from a definition of the goals an organization is expected to achieve (Etzioni, 1960, 1964; Ghorpade, 1971; Perrow, 1961, 1967, 1968; Simon, 1964; Thompson and McEwen, 1958; Warner, 1967). These criteria are determined by various factors (Price, 1968; Thompson, 1958). One common practice is to use the formal statement of goals found in charters, manuals, and other documents. Informal, but operative goals constitute other useful criteria. Still others may be derived from conceptualization of societal missions or functions of the organization...
>
> An organization's goals are identified by establishing the general goal, discovering means or objectives for its accomplishment, and defining a set of activities for each objective. The organization is evaluated by comparing the activities accomplished with those planned for...

It is extremely important that we establish what is meant by "goals" within the current context. Hence, even at the risk of losing the reader's interest, we feel obliged to call on Parsons (1956, p. 63) for further clarification:

> ...An organization is defined as a social system oriented to the attainment of a relatively specific type of goal, which contributes to a major function of a more comprehensive system, usually the society. Such an organization is defined as an institutionalized value system, above all defining and legitimizing its goal, and of the mechanisms by which it is articulated with the rest of society in which it operates.
>
> ...An organization is a system which, as the attainment of its goal, "produces" an identifiable something which can be utilized in some way by another system; that is, the output of the organization is, for some other system, an input...

As previously noted, the Goal model has numerous critics. These criticisms aside, however, it seems reasonable to believe that judgments regarding the effectiveness of many organizations, particularly publicly supported organizations like colleges and universities, are often based on the extent to which they achieve their goals. For current purposes it seems reasonable to assume that the goals of colleges and universities are teaching, research, and public service. However, goals stated this generally don't get us very far.

One way out of this problem is to assume that we may assess such globally stated goals vis-a-vis the achievement of finer grained goals or, the objectives for achieving them.1 This assumption buys us a great deal. Researchers have developed more than 80 different inventories of goals, objectives, and outcomes appropriate for postsecondary education (Lenning, Lee, Micek, Service, 1977).

We have chosen to deal with the problem by adopting an inventory that seems at least as good, if not better, than most. The inventory was developed at NCHEMS by Lenning, Lee, Micek, and Service (1977). One major benefit of adopting this inventory is that it provides examples of measures or indicators for each of

---

[1] Webster (1981, p. 785) defines an objective as "something toward which effort is directed: an aim or end of action: GOAL. According to the Encyclopedia of Educational Evaluation (Anderson, Ball, and Murphy, 1975, p. 179), "goals are concerned with ultimate outcomes and are usually phrased in general or global terms. Objectives are narrower and usually short-ranged; they are statements of student behaviors that, taken together, are thought to contribute to the envisioned final goals."

the elements included in the inventory. A description of the NCHEMS outcome structure is included in Appendix 2.

The NCHEMS model is stated in terms of "outcomes." However, these can easily be adapted to our needs by assuming that outcomes are simply objectives (or criteria) that have been achieved. We can turn any outcome into an objective simply by treating it as something to be achieved. For example, the first outcome in the NCHEMS structure is "Economic Access--The amount of openness or ease of admittance to economic opportunities, advancement." Stated as an objective (or criteria of effectiveness), it would read, "openness or ease of admittance to economic opportunities, advancement."

The NCHEMS structure identifies five major categories of outcomes: (1) Economic, (2) Human Characteristics, (3) Knowledge, Technology, and Art Forms, (4) Resource and Service Provision, and (5) Other Maintenance and Change. These categories are described in Table 2. The outcomes included under each of these categories are described in Table 3.

The outcomes in Tables 2 and 3 are numbered in a scheme that differs slightly from the scheme used by Lenning and his associates. The first digit references the effectiveness domain--(1) Goal Achievement, (2) Managerial Processes, (3) Organizational Climate, (4) Environmental Adaptation. The second digit references major categories of objectives in the domain. The third digit references subcategories within the major category. The fourth digit references a specific type of

Table 2
The Major "Type-of-Outcome" Catgory Names and Definitions

Category Code Number	
1100	**Economic Outcomes** -- Maintenance or change in economic characteristics and conditions of individuals, groups, organizations, and communities, e.g., in economic access, in economic mobility and independence, in economic security, and in income and standard of living.
1200	**Human Characteristic Outcomes** -- Maintenance or change in human makeup and characteristics (other than knowledge and understanding) of individuals, groups, organizations, and communities, e.g., aspirations, competence and skills, affective characteristics, perceptual characteristics, physical and physiological characteristics, personality and personal coping characteristics, recognition and certification, and social roles.
1300	**Knowledge, Technology, and Art Form Outcomes** -- Maintenance or change in the knowledge and understanding, technology, or the art forms and works possessed or mastered by individuals, groups, organizations, and communities, e.g., discoveries and inventions, technical developments, syntheses and reformulations of knowledge, new schools of thought in art and works created in those new traditions, renovation of art works.
1400	**Resource and Service Provision Outcomes** -- Maintenance or change in the direct resources and services (other than those included above) provided to individuals, groups, organizations, and communities, e.g., providing facilities, events, advisory assistance, analytic assistance, teaching, health care, and leadership.
1500	**Other Maintenance and Change Outcomes** -- Examples would be: maintenance or change in the format, arrangement, activity, or administrative operation of an organization or institution; maintenance or change in the aesthetic/cultural level of the local community; maintenance or change in family or community activities, practices, and traditions.

Table 3
Goal Achievement Outcomes-Criteria (1000)

1100 ECONOMIC OUTCOMES

- 1110 Economic Access and Independence Outcomes--Outcomes that relate to the entrance into, obtainability, flexibility, and levels and amounts of monetary or pecuniary situations, conditions, and characteristics.
  - 1111 Economic Access--The amount of openness or ease of admittance to economic opportunities, advancement.
  - 1112 Economic Flexibility, Adaptability, and Security--The amounts of self-sufficiency, liberty, frugality, thrift, self-government, confidence, certainty, safeguards, stability, and adjustment that are exhibited in economic matters.
  - 1113 Income and Standard of Living--Amount of profits, return on investment, necessities and comforts of life, wealth, and other signs of economic "well-being" that are obtained or possessed. Included is direct support provided to individuals and the community through local purchases by the educational institution and through staff salaries and wages.
- 1120 Economic Resources and Costs--Outcomes that relate to the amount and type of material, energy, effort, people, organization, and other economic assets that are available or that are expended in economic activities and production.
  - 1121 Economic Costs and Efficiency--The amounts of sacrifice, effort, expenditure, and waste present in economic activities and production.
  - 1122 Economic Resources (including employees)--The assets available that can aid economic production, distribution, and gain.
- 1130 Economic Production--Outcomes that relate to the creation of goods, services, and economic value.
  - 1131 Economic Productivity and Production--The value of goods and services that are created or produced by and within specific enterprises of "audiences" or clients of the educational institution, and especially in relation to the resources expended in the enterprise.
  - 1132 Economic Services Provided--Amount and type of direct-assistance activities provided by the educational institution or its subunits in the economic area.
- 1140 Other Economic Outcomes--An example would be that a company with a large payroll located in this community rather than another similar community because there is a more prestigious college here.

1200 HUMAN CHARACTERISTIC OUTCOMES

1210 Aspirations--Levels, patterns, and directions (in persons, groups, organizations, or communities) of interests, desires, drives, ambitions, goals, and intentions.

1211 Desires, Aims, or Goals--Places, conditions, things, or other ends that individuals and/or groups crave, toward which they have ambition, or that they intend to reach because of importance to them.

1212 Dislikes, Likes, and Interests--The persons or types of persons, objects, content areas, occupations and other things and situations for which there is a preference or antipathy.

1213 Motivation or Drive Level--The intensity of striving toward a goal that is elicited by a need or other stimulus.

1214 Other Aspirational Outcomes

1220 Competence and Skills--Levels, patterns, and direction of ability, capability, proficiency, and talent of different kinds.

1221 Academic Skills--The amount of ability or competence in taking tests, earning good grades, persisting in college, etc., without regard to the amount of cognitive learning that has taken place.

1222 Citizenship and Family Membership Skills--The ability or competence to perform relative to the rights, duties, and privileges of a member of a family, community, state or nation; for example, competence in managing family finances, being an effective consumer, and evaluating political issues.

1223 Creativity Skills--The amount of ability or competence in designing, producing, or otherwise bringing into existence original perspectives, explanations, and implementations.

1224 Expression and Communication Skills--The amount of ability or competence in conveying information, attitudes, or emotions on a one-to-one basis and/or to large or small groups or populations, by whatever media, in order to inform, challenge, uplift, and/or persuade, etc., and in receiving and interpreting such communications--through reading, writing, speaking, listening, touching, body movement, silence, and cultural arts like acting, painting, sculpturing, singing, playing musical instruments, etc.

1225 Intellectual Skills--The amount of ability or competence in formulating and analyzing problems, comprehending and understanding, synthesizing information, evaluating information, implementing a solution to a problem, and in locating, retaining, and filtering relevant knowledge.

1226 Interpersonal, Leadership, and Organizational Skills--The amount of ability or competence in effectively living and interacting with others, social organizing, being a congenial friend and companion, establishing courses of action for others, and influencing others to follow.

1227 Occupational Skills--The amount of ability or competence in the special, unique skills required by particular occupations, and in seeking, gaining, and maintaining a particular level and kind of employment.

1228 Physical and Motor Skills--The ability or competence in tasks requiring physical coordination, dexterity, manipulation, and other muscular or motor skills.

1229 Other Skill Outcomes--Examples are the ability to teach effectively, to handle one's leisure, etc.

1230 Morale, Satisfaction, and Affective Characteristics--Levels, patterns, and directions of characteristics typified by emotion.

1231 Attitudes--The disposition or tendency to respond either positively or negatively to particular persons or types of persons, things, situations, etc. It is a predisposition to act in a certain way.

AND

Values--A strong preference based on a conception of what is desirable, important, and worthy of esteem. Values affect an individual's actions and thoughts toward others.

1232 Beliefs, Commitments, and Philosophy of Life--The acceptance and internalization of particular propositions or declarations; the particular things that one is convinced are true. The held view of what "man" is, the purposes and reasons for a person's existence, and the system of principles and laws that should govern his/her thought, morals, character, and conduct or behavior. Included is the promotion of and the adherence to the conventions, practices, and teachings of religious organizations or sects.

1233 *Feelings and Emotions*--The disposition or tendency to respond or not respond subjectively to stimuli and the ability to control or not control such expressions, i.e., feelings of anguish or distress, anticipation, anxiety, concern, contentment, empathy, excitement, fear, frustration, happiness and joy, humor, lethargy, love, pleasure, satisfaction, sorrow, etc.

1234 Mores, Customs, and Standards of Conduct--Social and cultural practices, rules, and conventions designed to guide personal and corporate behavior. They have strong ethical or moral significance according to tradition and are enforced by social disapproval of violations.

1235 Other Affective Outcomes

1240 Perceptual Characteristics--Levels, patterns, and directions of consciousness, awareness, and sensitivity exhibited, and the view(s) or concept(s) of self, others, surroundings, events, ideas, etc.

1241 Perceptual Awareness and Sensitivity--The amount of consciousness or awareness of, or sensitivity to, stimuli that are exhibited by individuals or groups.

1242 Perception of Self--The view held about oneself; the characteristics that are perceived, i.e., self concept.

1243 Perceptions of Others--The manner in which other individuals and particular groups of others are viewed or perceived; the characteristics that are perceived.

1244 Perceptions of Things--The view one holds (i.e., the characteristics noted) of ideas or other things being examined with the physical senses.

1245 Other Perceptual Outcomes

1250 Personality and Personal Coping Characteristics--Levels, patterns, and directions of human conditions, factors, and traits related specifically to the mind and mental processes (other than skills, knowledge, and understanding).

1251 Adventurousness and Initiative--Willingness to take chances and risks; how daring an individual is; willingness to take a stand or speak out; willingness and capacity to initiate personal action or to become actively involved.

1252 Autonomy and Independence--The amount of freedom from control and influence of others that is exhibited.

1253 Dependability and Responsibility--The amount of reliability, trustworthiness, and accountability for own behavior that is exhibited.

1254 Dogmatism, Authoritarianism, and Open-Mindedness--The amount of open-mindedness, assertiveness, unassertiveness, and/or unquestioning obedience to authority that is exhibited.

1255 Flexibility and Adaptability--The amount of adjustment to new and changing situations and circumstances that is exhibited.

1256 Habits--The tendency to perform certain actions or to behave in characteristic, automatic ways.

1257 Psychological Functioning--The amount of psychological adjustment, contact with reality, self-understanding, and self-actualization (optimum self-realization) that is exhibited.

1258 Tolerance and Persistence--The amount of endurance, tenacity, forbearance, patience, and restraint that is exhibited.

1259 Other Personality and Personal Coping Outcomes

1260 Physical and Physiological Characteristics--Levels, patterns, and directions of human body traits and processes (other than skill functioning).

1261 Physical Fitness and Traits--Physical and physiological characteristics such as toughness, endurance, strength, speed, flexibility or dexterity, physical energy, muscular control, size, vocal characteristics, etc.

1262 Physiological Health--The physical well-being of individuals; how well the system of normal bodily operations is functioning.

1263 Other Physical or Physiological Outcomes

1270 Status, Recognition, and Certification--Levels, patterns, and direction concerning recognition of accomplishments, power, prestige, reputation, etc.

1271 Completion or Achievement Award--A certificate, diploma, or some other award for having completed a course or program, for some demonstrated proficiency, or for accomplishment of some type.

1272 Credit Recognition--Formal or informal acknowledgement of work completed or of confidence, trust, approval, etc.

1273 Image, Reputation, or Status--The amount of fame, distinction, respect, and standing in the eyes of the profession, the community, or some other group.

1274 Licensing and Certification--Formal written authority that a person or firm is qualified and has met the test to practice some skill or speciality occupation.

1275 Obtaining a Job or Admission to a Follow-Up Program--Success in being selected for a postgraduate employment position or a special education at a higher level.

1276 Power and/or Authority--The amount of acknowledged authorization or ability to influence, command, enforce obedience, or set policy as a right of rank, position, delegated jurisdiction, skill, strength, wealth, etc.

1277 Job, School, or Life Success--Evidence of success in one's occupation or career, in graduate or professional school, or in some other aspect of one's life that is covered in any of the above categories.

1278 Other Status, Recognition, and Certification Outcomes

1280 Social Activities and Roles--Levels, patterns, and directions of social functions assumed and carried out.

1281 Adjustment to Retirement--Altering self and lifestyle to meet the needs and adapt to the limitations of the retirement years.

1282 Affiliations--Finding appropriate organizations and institutions to join and associate with, and being accepted by them.

1283 Avocational and Social Activities and Roles--Finding, pursuing, and achieving rewarding nonwork activities, hobbies, and parts to play in society, and exhibiting that pattern of behavior that is expected of persons having the status that has been earned.

1284 Career and Vocational Activities and Roles--Exhibiting the patterns of behavior expected and/or that are needed for the part in the "world of work" that has been accepted or entered into.

1285 Citizenship Activities and Roles--Facilitating and contributing to governmental functions and to the overall well-being of individuals, the community, and larger society.

1286 Family Activities and Roles--Contributing to and facilitating family functions, i.e., parent roles, sibling roles, son/daughter roles, etc.

1287 Friendships and Relationships--Socially interacting with and entering into and sustaining intimate, in-depth, and satisfying associations with others.

1288 Other Activity and Role Outcomes

1290 Other Human Characteristic Outcomes

1300 KNOWLEDGE, TECHNOLOGY, AND ART FORM OUTCOMES

1310 General Knowledge and Understanding--Familiarity with, analysis and comprehension of, and application of facts and principles across broad areas of study--breadth of knowledge and understanding--as a result of dissemination through educational teaching/learning activities.

1311 Knowledge and Understanding of General Facts and Terminology--Knowing about and understanding, and having an adequate vocabulary to be able to describe, the reality, existence, and circumstances of particular sensory (observed, heard, felt, etc.) phenomena, objects, people, products, events, conditions, etc., or components thereof.

1312 Knowledge and Understanding of General Processes--Knowing about and understanding customs, rules and standards for judgments, guidelines, processes, methods, procedures, techniques, trends, and other ways of applying and making use of terminology and facts.

1313 Knowledge and Understanding of General Theory--Knowing about and understanding principles and generalizations, theoretical formulations, hypotheses, supposition, conjecture, etc.

1314 Other General Knowledge and Understanding

1320 Specialized Knowledge and Understanding--Familiarity with, analysis and comprehension of, and application of facts and principles in particular specialized fields of study--depth of knowledge and understanding--as a result of dissemination through educational teaching/learning activities.

1321 Knowledge and Understanding of Specialized Facts and Terminology--Knowing about and understanding, and having an adequate vocabulary to be able to describe the reality, existence, and circumstances of particular sensory (observed, heard, felt, etc.) phenomena, objects, people, products, events, conditions, etc., or components thereof.

1322 Knowledge and Understanding of Specialized Processes--Knowing about and understanding customs, rules and standards for judgments, guidelines, processes, methods, procedures, techniques, trends, and other ways of applying and making use of terminology and facts.

1323 Knowledge and Understanding of Specialized Theory--Knowing about and understanding principles and generalizations, theoretical formulations, hypotheses, supposition, conjecture, etc.

1324 Other Specialized Knowledge and Understanding

1330 Research and Scholarship--Knowledge and understanding, techniques, and physical products resulting from basic and applied research and scholarship.

1331 Research and Scholarship Knowledge and Understanding--The discovery, development, preservation, and professional dissemination of knowledge and understanding resulting from activities conducted in basic and applied research and scholarship.

1332 Research and Scholarship Products--Applied techniques (for example, a new therapy treatment in the field of medicine or a new technique in the field of music) and physical products (for example, a new or refined serum) developed from basic and/or applied research and scholarship.

1340 Art Forms and Works--Reproducing and preserving existing artistic forms and works, and developing new or revised artistic forms and works.

1341 Architecture--Outcomes involving the design for construction of buildings, landscape, living complexes, etc.

1342 Dance--Outcomes involving preservation or development of forms, works, and performances in the art of dance.

1300 KNOWLEDGE, TECHNOLOGY, AND ART FORM OUTCOMES (continued)

1343 Debate and Oratory--Outcomes involving preservation or development of forms and performances in the oratory arts.

1344 Drama--Outcomes involving the preservation or development of forms, works, and performances in the professional and amateur theatrical arts.

1345 Literature and Writing--Outcomes involving the preservation or development of forms and works in the production of prose, verse, and other writings.

1346 Music--Outcomes involving the preservation or development of forms, works, and performances in the professional and amateur theatrical arts.

1347 Painting, Drawing, and Photography--Outcomes involving the preservation or development of forms or works in the graphic and pictorial arts.

1348 Sculpture--Outcomes involving the preservation or development of forms or works in the carving, chiseling, casting, modeling, or other sculpturing areas.

1349 Other Fine Arts

1350 Other Knowledge, Technology, and Art Form Outcomes

1400 RESOURCE AND SERVICE PROVISION OUTCOMES

1410 Provision of Facilities and Events--The availability, use, and participation in campus happenings, buildings, equipment, and other resources by students, other individuals, and particular groups or communities.

1411 Provision of Facilities--Availability and use of campus grounds, buildings, rooms, equipment, etc.

1412 Provision or Sponsorship of Events--Availability and participation in happenings on the campus or off that are provided or stimulated by the college or one of its components.

1420 Provision of Direct Services--The availability, use, and receipt by students, other individuals, and particular groups or communities of assistance, care, or other service.

1421 Teaching--Activities and programs designed to instruct and to impart knowledge, skills, attitudes, etc.

1400 RESOURCE AND SERVICE PROVISION OUTCOMES (continued)

1422 Advisory and Analytic Assistance--Activities and programs designed for the purpose of (upon request) offering suggestions, recommendations, counsel, information, calculations, and studies.

1423 Treatment, Care, and Referral Services--Helping and direct assistance services, other than those above, provided by the institution, institutional units, and/or institutional staff.

1424 Provision of Other Services--An example would be direct civic leadership provided to the community. Another example would be offering keypunching service.

1430 Other Resource and Service Provision Outcomes--An example would be the attention and good will the college draws to the local community because it is located there.

1500 OTHER MAINTENANCE AND CHANGE OUTCOMES

1510 Aesthetic-Cultural Conditions--Preserving or bringing about changes in tastes, level and kinds of aesthetic-cultural emphasis, aesthetic-cultural availability and opportunities, aesthetic-cultural activity and participation, etc.

1520 Organizational Format, Activity, and Operations--For organizations, groups, and systems (and their components), maintenance or change in organizational communications, operational methods and interaction, operational effectiveness, organizational relationships, organizational arrangement and configuration, organizational activities and programs, and other such organizational characteristic outcomes.

1530 Other Maintenance and Change--Outcomes not covered by any of the other subcategories of "Maintenance" and "Change" in this dimension of the Outcomes Structure. An example might be "destruction of life support in the environment."

criterion within the major and sub-major category. This coding scheme is used in all discussions and tables that follow.

Examples of measures that can be used to assess achievement of these outcomes/objectives/criteria are reported in the Compendium of Measures (Appendix 3). The numbers reported under each of the criteria refer to indicators that are described in Appendix 4. The source of each indicator is reported in Appendix 5--along with all the criteria an indicator may be used to measure. We urge the reader to check these sources for complete descriptors of their utility, strengths and weaknesses.

For example, the data in Appendix 3 indicate that Economic Access (category 1111) can be measured by the percentage of students obtaining their first full-time job in the field of their choice within a specified time after graduation (indicator #1); and, the number of alternatives for an entry level job open to minority group graduates compared to minority group nongraduates (indicator #2). Both of these indicators were taken from the NCHEMS Outcome Structure.

Appendix 6 includes a description of two online databases that should be extremely useful to the reader. Both are maintained by the Bibliographic Retrieval Service (BRS). The first includes the most recent version of all tests evaluated for the Buros Mental Measurements Yearbooks. Its label is "MMYD." The MMYD database contains information on more than 1100 tests.

The second database was developed by the Educational Testing Service. It contains data on more than 5000 instruments. Its BRS label is "ETSF." The reader may access these databases to identify instruments that may be used to assess criteria discussed throughout the Compendium.

For our purposes, the thorniest component of the Outcomes Structure is category 1520--Other Maintenance and Change Outcomes: Organization Format, Activity, and Operations. The category suggests that the effectiveness of a postsecondary institution can be judged as a function of the extent to which it achieves its goals regarding "maintenance or change in organizational communications, operational methods and interaction, operational effectiveness, organizational relationships, organizational arrangements and configuration, organizational activities and programs, and other such organizational characteristic outcomes."

We have said that goal-centered effectiveness models view or define effectiveness in terms of the extent to which organizations achieve their goals. However, treating "maintenance or change in organizational conditions" (for example, budgeting, planning, flexibility, etc.) as organizational goals (1) is not consistent with the type of goals that are supposed to be included in this domain--teaching, research, and public service; (2) allows the domain to swallow-up the criteria included in all the other domains; and, perhaps of greatest importance (3) obscures the reasons for being concerned about these other conditions or criteria in the first place.

For example, taking the implementation of a particular budgetary process as an "organizational goal" obscures the fact that budgeting is part of a larger managerial process, the concern of which is the viability of the entire organization and the achievement of its goals. Hence, measures and indicators for assessing organizational conditions will not be included in this section. The reader who feels the necessity of treating organizational conditions as organizational goals will find measures for assessing them in the following sections.

Managerial Processes

A second class of models adopts the classical management approach to organizational effectiveness. That is, effectiveness is viewed or defined in terms of the extent an organization's managers perform certain managerial functions which are deemed critical to the achievement of organizational objectives. The models which form this domain (Bureaucratic Model, Internal Processes, Classical Management Principles) are all normative in nature--they assume that there are certain activities that all organizations must do to achieve their objectives.

The critical underlying assumption of Managerial Process Models is that organizations are rational entities, in which the effective mobilization and direction of internal processes and activities naturally leads to the achievement of organizational goals and objectives. Therefore, effectiveness criteria and measures for this class of models focus on the internal processes and mechanisms that produce results, rather than the achievement of outcomes. Further, this view of organizational effectiveness suggests that internal processes (for example, planning) can be objectively defined, rationally implemented, and subsequently measured. Effectiveness is then determined by the congruence between intended (clearly defined and structured) processes and realized results.

The models which form this domain generally adopt Weber's (1947) assumption that individuals are rational, willing actors in organizations that are defined as the sum of directed individual efforts. Individuals are viewed (Reeser, 1973, p. 1) as "the instruments through which managers utilize capital, materials, plant, and equipment." The presumed instrumentality of individuals underscores and defines the role of managers as those who are charged with concentrating and controlling the efforts of others.

The criteria for harnessing individual efforts into a single, concerted organizational endeavor are planning, organizing, directing, controlling, and staffing. These criteria and their measurement are also based on rational principles of organizational behavior. This suggests that a shared characteristic of all these criteria is that in order to become effective, all internal processes are expected to (1) be clearly and precisely stated, (2) define the responsibilities of all members of the enterprise, and (3) formally state the relationships between individual organizational members.

The Criteria

Planning, in Managerial Process Models, is the mechanism by which managers attempt to influence future activities by actions taken in the present (Hutchinson, 1971). The major components (criteria) of planning include the identification of organizational objectives, and the selection of policies, procedures, and methods designed to meet those objectives. Policies are defined as general principles for organizational activities. Procedures are the chronological sequence of steps to be followed in order to meet an objective. Methods refer to a particular step of a procedure that is to be performed.

Organizing is the mechanism that develops the set of formal relationships between and among organizational members. Organizing requires the development and formal articulation of managerial span of control, channels of communication, lines of authority, managerial and employee responsibilites, division of labor, and centralization or decentralization of tasks.

Directing is largely a communication process whereby leaders learn what motivates members of the organization, and use that information to direct activities. The components of directing include the (1) communication of clear, concise expectations for successful task completion, as well as a statement of the standards for rewards contingent on successful task completion; (2) articulation of employee development opportunities; and (3) identification and implementation of techniques and methods for motivating staff.

Control is the process of feedback that allows organizational leaders to evaluate the effect of past efforts, estimate the effect of present efforts on future outcomes, and estimate the effects of corrective actions taken. The components of control include establishing (1) standards by which achievement of organizational activities (for example, planning, organizing) can be evaluated in the present and in the future; (2) mechanisms by which information gathered needed for evaluation can be gathered; and (3) channels of distribution for feedback reports.

Staffing is the process whereby the organization's personnel needs are identified and met. The major components of staffing include job definition, recruitment, and assessment. The purpose of the staffing function is to ensure that organization roles are filled by personnel able and willing to occupy them.

The criteria shown in Table 4 are supplemented by principles of good management suggested by Koontz and O'Donnel (1972). We have used these principles as a means of gaining a little more insight and specificity regarding the criteria for achieving effectiveness from a managerial process perspective. For example, Koontz and O'Donnel describe the "Authority Level Principle" as follows (p. 411): Maintenance of intended delegation requires that decisions within the authority competence of an individual manager be made by him and not be referred upward in the organization structure. The principle is restated as a criterion (#2215) in Table 4 as, "Decisions within the authority competence of an individual manager are made by him/her and not referred upward in the organization structure."

Unfortunately, we have not completed our research with respect to all the subcriteria pertinent to Managerial Process Models. Hence, the Compendium shows indicators only for the major criteria shown in Table 4.

Table 4

MANAGERIAL PROCESSES (2000)

2100 Planning--the mechanisms by which managers attempt to influence future activities by actions taken in the present

2110 Primacy of Planning Principle--planning preceeds all other managerial functions.

2120 Planning Process Principle--individuals charged with planning understand and utilize consistent planning premises.

2130 Timing Principle--plans are structured to provide an appropriately timed, intermeshed network of derivative and supporting programs.

2131 Time Line--plans include time lines.

2140 Objectives

2141 Organizational--clear, written statements of organizational mission that delineate domains of activity and outline responsibilities of, and expectations for, providers and consumers of the educational product.

2142 Department & Subunit--clear, written statements of department and subunit objectives that are consistent with the overall goals and mission of the organization.

2143 Policies, Procedures, and Methods--policies, procedures, and meethods are designed to meet organizational objectives.

2200 Organizing--the mechanism that develops the set of formal relationships between and among organizational members

2210 Span of Control Principle--the span of managerial control is clearly articulated.

2211 Scalar Principle--there is a clear line of authority from the top manager in an enterprise to every subordinate position.

2212 Delegation Principle--the authority delegated to an individual manager is adequate to assure his ability to accomplish the results expected of him.

2213 Absolute Responsibility Principle--the responsiblity of the subordinate to his superior for performance is absolute, and no superior can escape responsibility for the organization activities of his subordinate.

2214 Parity of Authority Principle--the responsibility for actions is not greater than the authority delegated.

2215 Authority-Level Principle--decisions within the authority competence of an individual manager are made by him and not referred upward in the organization structure.

2220 Employee Responsibilities--the responsiblities of managerial employees in all departments, units and subunits in the organization are clearly delineated.

2230 Channels of Communication--channels of communication are clearly articulated.

2240 Division of Work--department, unit, and subunit responsibilities are clearly delineated.

2300 Directing--the process whereby leaders learn what motivates members of the organization, and use that information to direct activities

2310 Leadership Principle--managers understand what motivates subordinates.

2311 Motivation--managers motivate employees.

2320 Communication--expectations for successful task completion are clearly communicated to employees.

2330 Development--employee development opportunities are clearly articulated.

2400 Control--the process that allows leaders to evaluate the effect of past efforts, estimate the effect of present efforts on future outcomes, and estimate the effects of corrective actions taken

2410 Standards--clear delineation of standards for evaluating the achievement of organizational activities

2411 Evaluation--clear delineation of criteria on which objectives are evaluated.

2412 Information Collection--mechanisms exist for collecting information pertinent to assessment.

2420 Reflection of Plans Principle--controls are designed to deal with and reflect the nature and structure of plans.

2430 Suitability Principle--controls are designed to reflect the place in the organization structure where responsiblity for action lies.

2440 Distribution--channels are established for distributing the results of feedback reports, studies, etc.

2450 Corrective Action--corrective action is taken if-and-when objectives are not met.

2500 Staffing--the mechanism whereby the organization's personnel needs are identified and met

2510 Recruitment--formal standards and procedures exist for selecting and promoting personnel.

2520 Evaluation--formal standards and procedures exist for assessing all positions in the organization.

Organizational Climate

A third class of models view effectiveness primarily in terms of the extent to which organizations foster a supportive climate with respect to (a) meeting the needs of individual members, and (b) working together as a team. The models which employ this focus are generally associated with research in the field of Organizational Development (OD). The "Organizational Climate" domain reflects a slightly broader perspective than most of the models associated with OD perspectives in that it also encompasses aspects of an institution's educational climate.

Taking the broader concept of "climate" for the moment, Campbell (1974, p. 149) defines it as a "molar concept reflecting the content and strength of the prevalent values, norms, attitudes, behaviors, and feelings of members of a social system. Climate is thus a result of the transaction between individual members, with their idiosyncratic needs, abilities, goals, and the organizational structure." Litwin and Stringer (1968, p. 188) argue that understanding and manipulating an organization's climate is important because it "creates certain kinds of beliefs (expectancies) about what kinds of consequences will follow from various actions, and it indicates the kinds of satisfactions or frustrations (incentive values) that are available in a given situation."

Traditional OD is concerned with understanding and manipulating organizational climate vis-a-vis the use of intervention techniques that provide an organization's members with a means of examining their behavior in the "here-and-now" (Bennis, 1969)--for example, T-groups, process consultation, confrontation, etc. However, our interest in OD models follows from their definitions of what constitutes organizational effectiveness, rather than in the intervention techniques themselves.

OD theory generally recognizes the achievement of organizational goals as the ultimate criterion of organizational effectiveness. At the same time, however, OD theorists argue that in view of the previously noted shortcomings of taking goal achievement as "the" criterion of effectiveness, and because of the dynamic nature of organizations and their environments, the most effective organization is one whose human resources and energy are optimally mobilized to "achieve the organization's mission and, at the same time, maintain a viable, growing organization of people whose personal needs for self-worth, growth, and satisfaction are significantly met at work (Beckhard, 1969)."

Margulies and Raia (1972) point out that Organizational Development is essentially a systems approach to the total set of functional and interpersonal role relationships in organizations. They explain this as follows:

> ...the organization system consists of three major elements or subsystems: (1) the technical or task system, which includes the flow of work, the technology involved, the required task roles, and a number of other technological variables; (2) the managerial, or administrative system, which includes the organization structure, policies, procedures, and rules, the reward and punishment system, the ways in which decisions get made, and a large number of other

> elements designed to facilitate the management process; and finally (3) the human, or personal-cultural system, which is primarily concerned with organizational culture, values, norms, and the satisfaction of personal needs. Also included in the human system are the informal organization, the motivational level of members, and their individual attitudes. It is the interaction of these three systems that produces the behavior and role relationships that affect organizational output.[1]

In a seminal review of the OD literature, Campbell (1974) identifies three assumptions that appear to underlie OD theory:

> ...First, rapid and accelerating change is depicted as a fact with which both men and organizations must accept and cope (Bennis, 1969). The world is seen as changing in a variety of ways at an increasing rate. This implies that old ways of managing and organizing are no longer functional. The functional bureaucracy, in particular, is noted as being an outmoded model of organizations. Second, an optimistic point of view is taken toward the nature of man. Man is seen as reaching for growth, seeking self-actualization, and certainly much less in need of supervision in organizations than the conventional wisdom would imply. Almost any article or book dealing with OD will make this statement (Beckhard, 1969; Bennis, 1969; French and Bell, 1973; Margulies and Raia, 1972), but McGregor's statement on Theory X and Theory Y (1960) is still the most quoted version. Third, though this is less often made explicit, organizations are viewed as existing primarily, if not solely, for the benefit of the individual members of the organization. French (1972) states, "One value to which many behavioral scientist-change agents tend to give high priority, is that the needs and aspirations of human beings are the reasons for organized effort in society (p. 35)."

Campbell suggests that in addition to these three general values or assumptions most OD researchers and practitioners operate with some more specific set of organizational characteristics that define a healthy system. Several alternative lists of such characteristics are reported in Table ?.

---

[1] Margulies and Raia, 1972, p.

Reviewing the assumptions and normative goals of OD theory Campbell (1974, p. 19) concludes that from the OD perspective, the "effective organization:"

> ...will be aware of, open to, and reactive to change. It will be searching for new forms and methods of organizing. It will have an optimistic view of its members, allowing them room to self-actualize and trusting them with the responsibility for their own efforts. It will also seek to insure the satisfaction of its members since that is its reason for existence. To these ends, conflict will be confronted, not avoided, and communication will occur freely and effectively.

In other words, OD models assume that if an organization can achieve the state characterized by a list such as Beckhard's, it will be effective as an organization and will be optimally equipped to carry out its mission. The criteria shown in Table 5 are just a sample of those discussed in the literature. The biggest drawback to providing a unique list of such criteria is that different researchers use different labels for criteria that are concerned with very similar behaviors. Failure to address this problem would provide a list of criteria that would be several times longer than that found in Table 5.

We have dealt with this problem by identifying eight major categories of criteria. The categories were developed by doing a "mental factor analysis" of the criteria found in OD models and instruments used for OD purposes. The categories and the criteria that comprise them are described in Table 6. When subcategories

Table 5
ALTERNATIVE SETS OF ORGANIZATIONAL EFFECTIVENESS CRITERIA OBTAINED FROM LITERATURE ON ORGANIZATION DEVELOPMENT
from Campbell, Bownas, Peterson, and Dunnette (1974)

	Dependent Variable	Source
1.	High trust and support among organizational members.	French (1972)
2.	Confrontation (not avoidance) of problems.	"
3.	Knowledge based on authority as well as assigned role.	"
4.	Open communications	"
5.	High satisfaction and enthusiasm for organizational members.	"
6.	Frequent synergistic solutions.	"
7.	Presence of group responsibility for planning and implementation.	"
1.	Open, problem solving climate.	Bennis (1969) pp.36-37
2.	Role authority supplemented with authority based on competence.	"
3.	Decision-making responsibility is located close to information sources.	"
4.	High trust among persons and groups throughout organization.	"
5.	Competition is relevant to work goals and collaborative efforts are maximized.	"
6.	The reward system recognizes both achievement of organizational goals (profits or services) and development of people.	"
7.	High sense of ownership of organizational objectives throughout work force.	"

8.	Managers manage according to relevant objectives rather than according to past practices.	"

1.	Communication of information is reliable and valid.	Schein (1965)
2.	Internal flexibility and creativity in accordance with information.	"
3.	High integration and commitment to goals of organization.	"
4.	Internal climate is characterized by support and freedom from threat.	"

1.	"The total organization, the significant subparts, and individuals manage their work against *goals* and *plans* for achievement of these goals."	Beckhard, 1969
2.	"Form follows function (the problem, or task, or project determines how the human resources are organized."	"
3.	"Decisions are made by and near the sources of information regardless of where these sources are located on the organization chart."	"
4.	"The reward system is such that managers and supervisors are rewarded (and punished) comparably for: --short-term profit or production performance, --growth and development of their subordinates, --creating a viable working group."	"
5.	"Communication laterally and vertically is *relatively* undistorted. People are generally open and confronting. They share all the relevant facts including feelings."	"

6. "There is a minimum amount of inappropriate win/lose activities between individuals and groups. Constant effort exists at all levels to treat conflict and conflict situations as problems subject to problem solving methods." "

7. "There is high "conflict" (clash of ideas) about tasks and projects, and relatively little energy spent in clashing over *interpersonal* difficulties because they have been generally worked through." "

8. "The organization and its parts see themselves as interacting with each other *and* with a *larger* environment. The organization is an "open system." "

9. "There is a shared value, and management strategy to support it, of trying to help each person (or unit) in the organization maintain his (or its) integrity and uniqueness in an interdependent environment." "

10. "The organization and its member operate in an action-research way. General practice is to build in *feedback mechanisms* so that individuals and groups can learn from their own experience." "

Table 6
Organizational Climate (3000)

- 3100 Autonomy -- degree to which the group is independent of other groups; self-determination of group activity (GDDQ)
  - 3110 Control -- degree of group regulation of member behavior (GDDQ)
  - 3120 Flexibility -- extent to which group activities are free from constraint by custom, tradition, written rules, or unwritten codes (GDDQ)
  - 3130 Responsibility -- employee discretion in work, without supervisor checking up (L&S)
  - 3140 Task Structure -- the degree to which the methods used to accomplish tasks are spelled out by the organization (W&H)
- 3200 Structure -- emphasis on constraints, rules, regulations and formal procedures; orderliness, routine, formalization, standardization (L&S)
  - 3210 Production Emphasis -- close, directive supervision (OCDQ)
  - 3220 Stratification -- differentiation of internal status hierarchy (GDDQ)
  - 3230 Recognition and Feedback -- degree to which an individual knows what his supervisor and management think of his work and the degree to which they support him (W&H)
- 3300 Consideration and Support -- perceived helpfulness and backing received from superiors, peers, and subordinates (L&S)
  - 3310 Esprit -- morale; social and achievement need satisfaction (OCDQ)
  - 3320 Intimacy -- friendly social relations among members (OCDQ); closeness of acquaintanceship; familiarity with personal details of each other's lives (GDDQ)
  - 3330 Aloofness -- high emotional distance from leader (OCDQ)
  - 3340 Permeability -- openness of group to new members (GDDQ)

3350 Human Resources Primacy -- concern for welfare and happiness of workers (ISR)

3360 Warmth -- friendliness within the work group and organization (L&S)

3370 Potency -- centrality of group membership in the lives of members (GDDQ)

3380 Status and Moral -- the general feeling among individuals that the organization is a good place in which to work (W&H)

3400 Synergy -- (viscidity) cohesiveness; absence of dissension and conflict; degree to which all members function as a unit (GDDQ); cooperation

3410 Hindrance -- performance hindered by petty administrative details (OCDQ)

3420 Participation -- proportion of time spent in group activities (GDDQ)

3430 Goal Consensus -- degree to which group goal is unitary, and explicit to all members

3440 Standards -- perceived importance of organizational goals and performance standards (L&S)

3450 Conflict -- emphasis on working through rather than avoiding conflicts (L&S)

3460 Identity -- feeling of belonging to the organization and work group (L&S)

3470 Achievement Emphasis -- the desire on the part of the organization to do a good job and contribute to the performance.

3500 Reward Orientationg -- reward/performance relationship -- reflects the degree to which the granting of additional rewards such as promotions and salary increases are based on performance and merit rather than other considerations such as seniority, favoritism, etc. (W&H)

3510 Hedonic Tone -- amount of pleasure afforded by membership (GDDQ)

3520 Motivational Conditions -- presence and nature of organizational factors eliciting effort (ISR)

3600 Oppenness vs. Defensiveness -- degree to which people try to cover their mistakes and look good rather than communicate freely and cooperate (W&H)

3610 Communications Flow -- freedom of flow of task relevant information within and between groups (ISR)

3620 Security vs. Risk -- reflects the degree to which pressures in the organization lead to feelings of insecurity and risk (W&H)

3630 Support for creativity, experimentation

3700 Participation vs. Decision Centralization

3710 Disengagement -- group merely going through the motions; low involvement (OCDQ)

3720 Decision Making Practices -- decision making characterized by delegation and participation vs. centralization (ISR)

3730 Lower Level Influence -- amount of influence possessed by workers and first level supervisors (ISR)

3740 Decision Centralization -- the extent to which decision making is reserved for top management (W&H)

3800 Educational Climate: Emphasis on student learning, socilization, and motivation.

3810 Student Learning.

3811 Intellectual Climate -- devotion to scholarship in humanities, arts, and social sciences (CCI)

3812 Academic Climate -- emphasis on academic excellence in humanities and physical sciences (CCI)

3813 Academic Achievement -- press for high student achievement (CCI)

3814 Academic Organization -- emphasis on organization and structure in the environment

3815 Vocational Climate -- press for practical and conservative activities (CCI)

3816 Scholarship -- perceived environmental press for academic achievement; selectivity of the institution; importance of getting acceptable grades (CUES)

3820 Socilization and Motivation.

3821 Aspiration Level -- expectation that students will set high goals (CCI)

3822 Self-Expression -- opportunity to develop leadership ability and self-assurance (CCI)

3823 Group Life -- incidence of mutually supportive group activities (CCI)

3824 Social Form -- press for "proper" social behavior (CCI)

3825 Student Dignity -- degree of student autonomy and self-determination (CCI)

3826 Party Climate -- party atmosphere (CCI)

3827 Awareness -- perceived press for self-expression; artistic orientation; intellectual press (CUES)

3828 Community -- perceived press for social activities; affiliation with faculty and other students (CUES)

3829 Propriety -- press for social conformity; constraint; deference to tradition (CUES) were taken from a particular instrument, the initials of the instrument are shown in parentheses. The instruments are identified at the end of this section.

Only the major categories are referenced in the Compendium. This was done because (1) many of the subcategories are concerned with very similar behaviors; and (2) we have not had sufficient time to develop an adequate set of indicators for each of the subcategories. The reader requiring measures of a particular subcategory may turn to the (1) instruments noted as containing them; (2) ETS and MMYD databases described in Appendix 5.

The last (eighth) major category is Educational Climate. The subcategories shown under this category do not exhaust the list of criteria that are relevant of an institution's educational climate. However, they are a reasonably good sample. Unfortunately, we have not yet identified adequate indicators for each of the subcategories. The Compendium shows only a single indicator for Educational Climate. The indicator references standardized instruments such as those associated with each of the subcategories. Again, the reader requiring a measure of a particular subcategory may turn to the instrument from which it was initially taken (shown in parentheses); and/or the ETS and MMYD databases.

Instruments

CCI--College Characteristics Index (Stern, 1970)

CUES--College and University Environment Scales (Pace, 1968)

GDDQ--Group Dimensions Descriptive Questionnaire (Hemphill and Westie, 1950)

ISR--Survey of Organizations (Likert, 1967)

L&S--Climate Questionnaire (Litwen and Strenger, 1968)

OCDQ--Organizational Climate Descriptor Questionnaire (Halpin and Croft, 1962)

W&H--Campbell, Dunnette, Lawler, and Weick (1970)

Environmental Adaptation

The last set of models to be considered view or define effectiveness in terms of the extent to which an organization adapts to its environment. The models which employ this focus (for example, Systems Resource (Seashore and Yuchtman, 1967), Structural Functional (Perrow, 1967), Multiple Constituencies (Pennings and Goodman, 1977) all argue and assume that the only appropriate way to understand and assess organizational effectiveness is by adopting an open systems perspective.

We believe that one of the simplest yet informative descriptions of open systems models is found in Hall (1972, p. 23). He suggests that the distinction between the closed and open-systems approaches to organizations has its roots in Gouldner (1959, p. 405), who distinguished between the "rational" and "natural system:"

> The natural-system model regards the organization as a "natural-whole," or system. The realization of the goals of the system as a whole is but one of several important needs to which the organization is oriented.

Hall goes on to explain that one of these "important" needs is survival which can lead to neglect or distortion of goal-seeking behavior. He writes (p. 23):

> ...The organization is seen as emergent, with organizational goals playing a relatively minor role in the directions in which the organization emerges. The natural systems approach stresses the interdependence of the parts of organizations, noting that even a planned change in one part will have

> important, and usually unanticipated, ramifications for the rest of the system.

The existence of multiple effectiveness models based on a systems view means that each must differ at least slightly from one another in terms of their definitions of effectiveness and the criteria they employ. However, common to all models are the assumptions that in order for an organization to survive it must (1) do more than achieve its goals--e.g., acquire resources, implement managerial structures, (2) acquire resources and allocate them efficiently, and (3) manage its subsystems so they are in harmony and coordinated to work together.

Seashore and Yuchtman developed one of the first systems-based effectiveness models. After citing all the previously noted criticisms of goal centered (that is, closed system) models of effectiveness they proposed the following:

> [We] define the effectiveness of an organization in terms of its bargaining position, as reflected in the ability of the organization, in either absolute or relative terms to exploit its environment in the acquisition of scarce and valued resources.
>
> The concept of "bargaining position" implies the exclusion of any specific goal (or function) as the ultimate criterion of organizational effectiveness. Instead it points to the more general capability of the organization as a resource-getting system.[1]

Seashore and Yuchtman argue, in accord with systems theory, that "input of resources" is only one of the three major cyclic phases in the system of organizational behavior. The other two being throughput and output. However, they contend that the bargaining position of an organization is a function of, and reflects, all three phases of organizational behavior.

---

[1] Seashore and Yuchtman, 1967, p. 898

A view which emphasizes the role of organizational subsystems and constituencies in determining effectiveness was developed by Pennings and Goodman (1977). They write:

> ...Organizations are seen as open systems having exchange relationships with their environment and with subsystems that render a contribution to the whole and to each other...Organizations are also seen as comprising interest groups, or constituencies, which make claims on the organization...Organizational subsystems, in this open systems view, both determine organizational effectiveness, and play a role as constituency in defining its criteria.
>
> ...Organizational effectiveness is associated with the contributions of subunits...Organizational effectiveness is likely to be a function of the extent to which the subunits meet their task requirements as well as the extent to which their activities are coordinated...If each subunit were independent, organizational effectiveness would equal the combined effectiveness of all subsystems...

The Organizational Environment

Before we can identify appropriate criteria and indicators of how well an organization has adapted to its environment, we must first decide what is meant by the "organization's environment." Hall (1972) describes an organization's environment as everything "outside of" a particular organization--"Climactic and geographic conditions, other organizations, the state of the economy..."[2] He distinguishes between an organization's "specific" and

---

[2] Hall, 1972, p. 9.

"general" environment. The specific environment is composed of the organizations and individuals with which an organization is in direct interaction. The general environment is viewed as being comprised of eight different, but overlapping conditions:

1) technological conditions
2) legal conditions
3) political conditions
4) economic conditions
5) demographic conditions
6) ecological conditions
7) cultural conditions
8) social conditions

At the other end of the spectrum, Starbuck (1976) and Child (1972) argue that organizations cannot be distinguished from their environments. That, since organizations largely invent or enact their environment, they cannot be distinguished from it. In Starbuck's words:

> Assuming organizations can be distinguished from their environments distorts reality by compressing into one dichotomy a melange of continuously varying phenomena...Organizations' environments are largely invented by organizations themselves. Organizations select their environments from ranges of alternatives, then they subjectively perceive the environments they inhabit.3

Child (1972) argues:

> The environment of an organization cannot be satisfactorily defined without reference to what Levine and White have called "organizational domain." This consists of specific goals which organization decision makers wish to pursue and the functions which they cause an organization to undertake in order to implement these goals...

---

[3] Starbuck,1976, p. 1069

> ...We have argued that the analysis of organization and environment must recognize the exercise of choice by organizational decisionmakers. They may well have power to enact their organization's environment (Weick, 1969, p. 63). Thus, to an important extent, their decisions as to where the organizations operations shall be located, the clientele it shall serve, or the types of employees it shall recruit, determine the limits of its environment.[4]

We generally side with the position taken by Starbuck and Child. However, the potential focii of assessment are more easily identified by assuming that an organization's environment is defined by the conditions described by Hall. Irrespective of which position is taken, either's interpretation of what constitutes an organization's environment means that the focus of assessment for a given criterion will probably differ as a function of which environmental condition we are concerned about.

For example, determining organizational efficiency relative to existing technological conditions entails different questions and indicators than would be appropriate for assessing efficiency relative to existing economic, social, or cultural conditions. Unfortunately, we have not yet (1) determined how the focus changes for all of the criteria included in this domain, or (2) identified indicators for assessing them. However, the Compendium does identify measures that can be used to assess some of the criteria relative to specific environmental conditions.

---

[4] Child, 1972, p. 10.

Criteria of Adaptation

The effectiveness models which form the basis of this domain generally view or define effectiveness in terms of (1) how well an organization has adapted to its environment--that is, its "adaptation;" and (2) its ability to adapt to changing or potential environments--that is, its "adaptability." Resource acquisition and utilization is the primary focus in both conditions. However, in the first condition (adaptation), the concern is with resource acquisition and utilization "in-and-of itself." In the second condition, the focus is on resource acquisition and utilization for purposes of generating organizational "slack."

According to the models which form the basis for this domain, in order for an organization to be effective it must be efficient and productive; it must have the ability to acquire resources, and actually acquire them; it must satisfy its clients; it must be able to search out, correctly interpret, and respond to the real properties of the environment; it must have some control over, and enjoy some security from, threats to its well-being. These criteria form the basis for the Environmental Adaptation Domain (Table 7). Procedures and measures for assessing them are reported in the Compendium.

While none of the criteria shown in Table 7 are easily assessed, two are particularly troublesome: efficiency and productivity. Efficiency is generally thought of in terms of a ratio that reflects some aspect of unit performance to the costs incurred for that performance. Economists, however, talk about at

Table 7
ENVIRONMENTAL ADAPTATION (4000)

4100 Efficiency--generally thought of in terms of a ratio that reflects some aspect of unit performance to the costs incurred for that performance.

4200 Productivity--is usually defined (a) as the quantity of or volume of the major product or service that the organization provides; (b) value of outputs relative to the value of inputs.

4300 Bargaining Position--ability of the organization to exploit its environment in the acquisition of scarce and valued resources.

4310 Tangible Resources--number, quality, and type of resouces:

4311 Physical Plant & Equipment--e.g., buildings, grounds, book value, replacement cost, etc.

4312 Support Services--e.g., counseling, finanical aid, housing, food, computer, library, etc.

4313 Facilities--buildings (e.g., gross area, assignable area, age, replacement cost, condition, etc.), rooms (e.g., classrooms, laboratories, offices, special use, general use, etc.).

4314 Faculty and Staff--ehtnicity, sex, appointment status, type of appointment, type of position, tenure status, educational credentials, etc.

4315 Students--e.g., full-time, part-time, level, adult, race, age distribution, geographic origin, educational credientials, objectives, aptitude, etc.

4316 Financial--assets (e.g., cash, investments, accounts receivable, inventories, etc.), liabilities (e.g., accounts payable, deferred revenues/credits, owner equity, etc.)

4317 Collections--library resources or library holdings (e.g., physical units, audiovisual materials, distribution, acquisitions, etc.)

4318 Educational Programs--regular, continuing education, quality, accreditation, etc.

4320 Intangible Resources--e.g., goodwill, community involvement and support, faculty and staff morale.

4400 Client Satisfaction--ability of the organization to meet the needs of its various constituencies.

4500 Capacity To Test Reality--ability of the organization's decisionmakers to perceive and correctly interpret the real properties of the environment

4600 Control Over The Environment--ability of the organization's decisionmakers to enact its environment.

4700 Flexibility/Readiness--ability of the organization to change in response to environmental changes.

least three different aspects or interpretations of efficiency: 1) technical efficiency, which refers to how resources are used in the production process; 2) price (or allocative) efficiency refers to how resources are allocated given their prices; and 3) preference (or value) efficiency, which refers to the relationship between the amount of resources used and the mix of outputs. These three aspects of efficiency taken together can be referred to as production efficiency. This is to be distinguished from exchange efficiency, which refers to the delivery of products and services to customers.

To complicate things further, a search of the ERIC database provides more than 100 entries for the combined descriptors "efficency" and "higher education." The articles dealt with topics that included: enrollment systems, multi-campus systems, fund-raising, cost, learning, automation, scheduling, management, financial aid, library practices, campus planning, energy conservation, pricing, etc.

In view of the complexity of the issues surrounding the efficiency criterion, even for experts in the field, we feel obliged to point out that our understanding and treatment of the problem is simplistic. Indicators for the general criterion of efficiency (4100) are shown in the Compendium. However, we have not attempted to identify measures for either general (production, exchange) or specific subcriteria (technical, price, preference). The interested reader will find an excellent discussion and summary of the efficiency problem in higher education in Lindsay (1982).

In technical terms, "productivity" according to Wallhaus (1975), is defined as the value of outputs relative to the value of inputs. However, he goes on to explain that:

> ...this definition is interpreted in a variety of ways as it relates to different decisions, policy issues, and persons involved in higher education. These different perceptions of productivity are understandable considering the wide range of products--student growth and development, community services, new knowledge and art forms (Micek and Wallhaus, 1973; Gross and Grambsch, 1968)--and the variety of possible roles and missions of higher education institutions: as instruments of social change, environments for human relations, manpower factories, sorting and screening devices, and educational utilities, for example (Weathersby, 1971; Peterson, 1973). Thus, to understand productivity in higher education one must place the technical definition in the context of the decisions being made and the policy issues surrounding the enterprise.
>
> Utilizing an input/process/output model of higher education, this definition can be examined in light of the following questions: What is the mix of inputs? Who pays for these inputs? What is the mix of outputs? Who benefits from these outputs? And what is the relationship between inputs and outputs in terms of the technologies employed?[1]

To illustrate the problem, a search of the ERIC database produced more than 400 entries for productivity and higher education. The articles on productivity dealt with topics that include: faculty workload, long-range planning, library planning, statewide planning, adult education, staff utilization, enrollment trends, self esteem, research, etc. Again, we must apologize to the reader for our lack of expertise. While we have included a handfull of productivity measures in the Compendium, our treatment of the subject is simplistic at best.

---

[1] Wallhaus, 1975, p. 1.

A third criterion which may benefit from further explanation is "Bargaining Power," or the ability of the organization to exploit its environment in the acquisition of scarce and valued resources. This criterion is the key component of the Systems Resource Model (Seashore and Yuchtman, 19??). The criterion is fundamentally concerned with "the more general capability of the organization as a resource-getting system."[2] Measurement of this criterion requires two different types of data. One, focuses on the tangible resources the organization has actually acquired or has access to--for example, personnel, facilities, technology, money, etc. The second is concerned with intangible resources that the organization has earned and/or can call upon. These would include such things as goodwill and community support. This second category of resources is largely a function of what an organization has done for its constituencies, and what it can do in the future.

Before concluding this chapter we would like to suggest one additional environmental condition not discussed by Hall--academic conditions. Inclusion of this category in conjunction with the "Resources" criterion forms the basis for several of the criteria previously discussed as components of effective colleges and universities--particularly accreditation requirements. Recognizing that accreditation agencies generally view these as indicators of an organization's ability to achieve its goals, they really are criteria that an organization must respond to in order to meet its academic obligations.

---

[2] Seashore and Yuchtman, 1971, p. 482.

Bibliography

Anderson, S.B., Ball, S., and Murphy, R.T. Encyclopedia of educational evaluation. San Francisco: Jossey-Bass, 1975.

Argyris, C. Interpersonal competence and organizational effectiveness. Homewood, IL: Dorsey Press (Irwin), 1962.

Astin, A.W. Measuring student outputs in higher education. In B. Lawrence, G. Weathersby, and V.W. Patterson (Eds.), Outputs of higher education: Their identification, measurement, and evaluation. Boulder, CO: Western Interstate Commission for Higher Education, 1970.

Astin, A.W. and Holland, J.L. The environmental assessment technique: A way to measure college environments. Journal of Educational Psychology, 1961, 52, 308-316.

Astin, A.W. and Lewis, C.S. Part two: The quality of undergraduate education--Are reputational ratings needed to measure quality? Change, 1981, 14-19.

Barney, J. The electronic revolution in the watch industry: A decade of environmental changes and corporate strategies. New Haven, CT: School of Organization and Management, Yale University, 1977.

Barton, A.H. Organizational measurement and its bearing on the study of college environments. New York: College Entrance Examination board, 1961.

Bass, B.M. Ultimate criteria of organizational worth. Personnel Psychology, 1952, 5, 157-173.

Bauer, R.A. Detection and anticipation of impact: The nature of the task. In R.A. Bauer (Ed.), Social Indicators. Cambridge, MA: Massachusetts Institute of Technology Press, 1966.

Becker, G.S. Human capital: A theoretical and empirical analysis, with special reference to education. New York: National Bureau of Economic Research, 1964.

Beckhard, R. Organizational development: Strategies and models. Reading, MA: Addison-Wesley, 1969.

Bennis, W.G. Organization development: Its nature, origins, and prospects. Reading, MA: Addison-Wesley, 1969.

Bidwell, C.E., and Kasarda, J.D. School district organization and student achievement. American Sociological Review, 1975, 40, Cameron, K. Measuring organizational effectiveness in institutions of higher education. Administrative Science Quarterly, 1978, 23(4), 604-632.

Campbell, D.T. Reforms as experiments. American Psychologist, 1969, 24, 409-429.

Campbell, J.P., Dunnette, M.D., Lawler, E.E., and Weick, K.E. Managerial behavior, performance, and effectiveness. New York: McGraw-Hill, 1970.

Carnegie Commission on Higher Education. Continuity and discontinuity: Higher education and the schools. New York: McGraw-Hill, 1973.

Cartter, A.M. An assessment of quality in graduate education. Washington, D.C.: American Council on Education, 1966, 55-70.

Chambers, R.H. Enhancing campus quality through self-study. New Directions for Institutional Research, 1984, 41, 9-22.

Child, J. Organizational structure, environment and performance: The role of strategic choice. Sociology, 1972, 6.

Christenson, C. Program budgeting. Unpublished paper. Cambridge, MA: Harvard University, 1969.

Cook, T.J. and Scioli, F.P., Jr. A research strategy for analyzing the impact of public policy. Administrative Science Quarterly, 1972, 17, 328-339.

Cunningham, J.B. Approaches to the evaluation of organizational effectiveness. Academy of Management Review, 1977, 2, 463-474.

Dubin, R. Organizational effectiveness: Some dilemmas of perspective. Organization and Administrative Sciences, 1976, 7, 7-14.

Easton, D.A. A framework for political analysis. Englewood Cliffs, NJ: Prentice-Hall, 1965.

Etzioni, A. Two approaches to organizational analysis: A critique and a suggestion. Administrative Science Quarterly, 1960, 5, 247-278.

Etzioni, A. A comparative analysis of complex organizations. New York: The Free Press, 1961.

Etzioni, A. Modern organizations. Englewood Cliffs, NJ: Prentice-Hall, 1964.

Evan, W.M. Organizational theory and organizational effectiveness: A preliminary analysis. Organization and Administrative Sciences, 1976, 7, 15-28.

Ewell, P.T. Toward the self-regarding institution: Excellence and accountability in post secondary education. National Center for Higher Education Management Systems, Boulder, CO, 1985.

Faerman, S.R. and Quinn, R.E. Effectiveness: The perspective from organizational theory. Institute for Government and Policy Studies, Rockefeller College of Public Affairs and Policy, Albany, New York, 1985.

French, W., and Bell, C.H., Jr. Organization development: Behavioral science intervention for organization improvement. Englewood Cliffs, NJ: Prentice Hall, 1973.

Friedlander, F., and Pickle, H. Components of effectiveness in small organizations. Administrative Science Quarterly, 1968, 13, 289-304.

Georgopoulos, B.S., and Tannenbaum, A.S. A study of organizational effectiveness. American Sociological Review, 1957, 22, 534-540.

Ghorpade, J. Assessment of organizational effectiveness: Issues, analysis and readings. Pacific Palisades, CA: Goodyear, 1971.

Goodman, H.H. The identification and classification of educational outputs. (Ph.D. dissertation, North Carolina State University at Raleigh.) Dissertation Abstracts International, 1971.

Gouldner, A.W. Organizational analysis. In R. K. Merton, L. Broom, and L. S. Cottrell, Jr. (Eds.), Sociology Today. New York: Basic Books, Inc., 1959, 405-6.

Gross, E. Universities as organizations: A research approach. American Sociological Review, 1968, 33, 518-544.

Gross, E., and Grambsch, P.V. University goals and academic power. Washington, DC: American Council on Education, 1968.

Hall, R.H. Organizations: structure and process. Englewood Cliffs, NJ: Prentice Hall, Inc., 1972.

Halpin, A.W. and Croft, D.B. The organizational climate of schools. Mimeographed report, June, 1962.

Hemphill, J.K. and Westie, C.N. The measurement of group dimensions. Journal of Psychology, 1950, 29, 325-342.

Hirsch, P.M. Organizational effectiveness and the institutional environment. Administrative Science Quarterly, 1975, 20, 327-344.

Hitch, C.J. Decision making for defense. Berkeley, CA: University of California Press, 1965.

Hitch, C.J. Decision making in large organizations. In L.C. Gawthrop (Ed.), The Administrative Process and Democratic Theory. Boston: Houghton Mifflin, 1970.

Hoenack, S.A., et al. University planning, decentralization, and resource allocation. Unpublished paper. Minneapolis: University of Minnesota, Management Information Division, 1974.

House, R.J. and Rizzo, J.R. Toward the measurement of organizational practices: Scale development and validation. Journal of Applied Psychology, 1972, 56, 388-396.

Humble, J.W. (Ed.) Management by Objectives in action. New York: McGraw-Hill, 1970.

Kanter, R.M. and Brinkerhoff, D. Organizational performance: Recent developments in measurement. Annual Review of Sociology, 1981, 7, 321-349.

Katz, D., and Kahn, R.L. The social psychology of organizations. New York: John Wiley & Sons, 1978.

Kaufman, H. The forest ranger. Baltimore: John Hopkins Press, 1960.

Kimberly, J.R. Organizational size and the structuralist perspective: A review, critique, and proposal. Administrative Science Quarterly, 1976, 21, 571-597.

Kirchhoff, B.A. Examination of a factor analysis as a technique for determining organizational effectiveness. Proceedings of Midwest AIDS Conference, 1975.

Koontz, H. and O'Donnell, C. Principles of management: An analysis of managerial functions. San Francisco: McGraw-Hill Book Company, 1972.

Lawler, E.E. III, Hall, D.T., and Oldham, G.R. Organizational climate: Relationship to organizational structure, process, and performance. Organizational Behavior and Human Performance, 1974, 11, 139-155.

Lenning, O.T. The outcomes structure: An overview and procedures for applying it in postsecondary education institutions. Boulder, CO: National Center for Higher Education Management Systems, 1977.

Lenning, O.T., Lee, Y.S., Micek, S.S., and Service, A.A. A Structure for the Outcomes of Postsecondary Education. Boulder, Colo.: National Center for Higher Education Management Systems, 1977.

Likert, R. The human organization. New York: McGraw-Hill, 1967.

Lindsay, A.W. Institutional performance in higher education: The efficiency dimension. Review of Educational Research, 1982, 52, 175-199.

Litwin, G.H. and Stringer, R. Motivation and organizational climate. Boston: Harvard University Press, 1968.

Mahoney, T.A., and Weitzel, E.F. Managerial models of organizational effectiveness. Administrative Science Quarterly, 1969, 14, 357-365.

Margulies, N., and Raia, A.P. (Eds.) Organizational development: Values, process, and technology. New York: McGraw-Hill 1972.

McGregor, D. The human side of enterprise. New York: McGraw-Hill, 1960.

Micek, S.S., and Wallhaus, R.A. An introduction to the identification and uses of higher education outcome information. Technical Report No. 40. Boulder, CO: National Center for Higher Education Management Systems at WICHE, 1973.

Miles, R.H., and Cameron, K. Coffin nails and corporate strategies: A quarter century view of organizational adaptation to environment in the U.S. tobacco industry. Working paper No. 3, Business-Government Relations Series, Yale University, 1977.

Millard, R.M. The accrediting associations: Ensuring the quality of programs and institutions. Change, 1983, May/June, 32-36.

Miller, R.I. The assessment of college performance. San Francisco: Jossey-Bass, 1979.

Ordiorne, G.S. Management by objective: A system of managerial leadership. New York: Pitman, 1965.

Ordiorne, G.S. Management decisions by objectives. Englewood Cliffs, NJ: Prentice-Hall, 1969.

Pace, C.R. The measurement of college environments. In R. Taguiri and G. Litwin (Eds.), Organizational climate:

Explorations of a concept. Boston: Harvard University Press, 1968.

Parsons, T. Suggestions for a sociological approach to the theory of organizations-II. Administrative Science Quarterly, 1956, 1, 224-239.

Pennings, J.M., and Goodman, P.S. Toward a workable framework. In P.S. Goodman and J.M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

Perrow, C. Goals in complex organizations. American Sociological Review, 1961, 6, 854-865.

Perrow, C. A framework for the analysis of complex organizations. American Sociological Review, 1967, 32, 194-208.

Perrow, C. Organization goals. International Encyclopedia of the Social Sciences, 1968, 11, 305-316.

Perrow, C. Organizational analysis: A sociological view. Belmont, CA: Wadsworth Publishing Company, 1970.

Peterson, R.E. College goals and the challenge of effectiveness. Princeton, NJ: Educational Testing Service, 1971.

Peterson, R. Institutional research program for higher education: Institutional goals inventory. Princeton, New Jersey: Educational Testing Service, 1973.

Peterson, R.E. and Vale, C.A. Strategies for assessing differential institutional effectiveness in multi-campus systems. Educational Testing Serivce, Berkeley, 1973.

Pfiffner, J.M., and Sherwood, F.P. Administrative organization. Englewood Cliffs, NJ: Prentice-Hall, 1960.

Price, J.L. Organizational effectiveness: An inventory of propositions. Homewood, IL: Irwin, 1968.

Price, J.L. The study of organizational effectiveness. Sociological Quarterly, 1972, 13, 3-15.

Quinn, R.E. and Rohrbaugh, J. A competing values approach to organizational effectiveness. Public Productivity Review, 1981, 5, 122-140.

Quinn, R.E. and Rohrbaugh, J. A spatial model of effectiveness criteria: Toward a competing values approach to organizational analysis. Management Science, 1983, 29, 363-377.

Reeser, C. Management: Functions and modern concepts. Glenview, IL: Scott, Foresman & Co., 1973.

Reinhart, U.E. Proposed changes in the organization of health care delivery: An overview and critique. Milbank Memorial Fund Quarterly, 1973, 51, 169-222.

Rivlin, A.M. Systematic thinking for social action. Washington, DC: The Brookings Institution, 1971.

Robinson, J.A. and Majak, R.R. The theory of decision-making. In. J.C. Charlesworth (Ed.), Contemporary Political Analysis. New York: Free Press, 1967.

Schalock, H.D., et al. The Oregon studies of research, development, diffusion, and evaluation. Summary Report, Vol 1. Monmouth, OR: Teaching Research, 1972.

Scott, W.R. Effectiveness of organizational effectiveness studies. In Goodman and Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

Seashore, S.E., Indik, B.P., and Georgopolous, B.S. Relationships among criteria of job performance. Journal of Applied Psychology, 1960, 44, 195-202.

Seashore, S.E., and Yuchtman, E. Factorial analysis of organizational performance. Administrative Science Quarterly, 1967, 12, 377-395.

Simon, H.A. On the concept of organizational goals. Administrative Science Quarterly, 1964, 9, 1-22.

Starbuck, W.H. Organizations and their environments. In M.D. Dunnette (Ed.), Handbook of Industrial and Organizational Psychology. Chicago: Rand-McNally, 1976.

Steers, R.M. Problems in measurement of organizational effectiveness. Administrative Science Quarterly, 1975, 20, 546-558.

Steers, R.M. Organizational effectiveness: A behavioral view. Santa Monica: Goodyear Publishing Co., 1977.

Stern, G.G. People in context: Measuring person-environment congruence in education and industry. New York: Wiley, 1970.

Taylor, J.C. and Bowers, D.G. Survey of organizations. Ann Arbor, Mich.: Institute for Social Research, 1972.

Thompson, J. D. Organizations in action. New York: McGraw-Hill, 1967.

Thompson, J.D., and McEwen, W.J. Organizational goals and environment. American Sociological Review, 1958, 23, 21-33.

Wallhaus, R.A. The many dimensions of productivity. New Directions for Institutional Research, 1975, 8, 1-16.

Warner, W.K. Problems in measuring the goal attainment of voluntary organizations. Journal of Adult Education, 1967, 19, 3-14.

Warner, W.K. and Havens, A.E. Goal displacement and the intangibility of organizational goals. Administrative Science Quarterly, 1968, 12, 539-555.

Weathersby, G.B. Alternative conceptual models of postsecondary education. In L. A. Glenny and G. B. Weathersby (Eds), Statewide planning for postsecondary education: Issues and designs. Boulder, Colo.: Western Interstate Commission for Higher Education, 1971.

Webb, R.J. Organizational effectiveness and the voluntary organization. Academy of Management Journal, 1974, 17, 663-677.

Weber, M. In A.M. Henderson and T. Parsons (Eds.), The theory of social and economic organization. NY: Oxford University Press, 1947.

Webster. Webster's new collegiate dictionary. Springfield, Mass.: G & C Merriam Company, 1981.

Weick, K.E. The social psychology of organizing. Reading, Mass.: Addison-Wesley, 1969.

Weick, K. Re-punctuating the problem. In P. Goodman and J. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

Appendix 1

The Competing Values Approach

From "Effectivenss: The perspective from organizational theory,"by S.R. Faerman and R.E. Quinn, 1985.

In a radical departure from previous analytic studies designed to derive dimensions of organizational effectiveness, Quinn and Rohrbaugh (1981, 1983) posed the question, "How do individual theorists actually think about the construct of effectiveness?" Thus, they focused on the cognitive structure of organizational theorists and researchers, rather than on specific organizational structures or processes.

In a series of studies, Quinn and Rohrbaugh had organizational theorists and researchers make judgments regarding the similarity or dissimilarity between pairs of effectiveness criteria. Starting with a comprehensive list of effectiveness criteria compiled by Campbell (1977), Quinn and Rohrbaugh organized and reduced this list by asking panelists to identify any criterion that was: (1) not at the organizational level of analysis, (2) not a singular index, but a composite of several criteria, (3) not a construct, but a particular operationalization, or (4) not a criterion of organizational performance. Of the original 30 criteria, 13 were eliminated. Panelists were then asked to compare each of the 17 criteria to each of the other 16, and to make judgments regarding the similarity or dissimilarity between each pair. The data were analyzed data using a multidimensional scaling algorithm. Results of the analyses suggested that organizational theorists and researchers share an implicit theoretical framework, or cognitive map, and that the criteria of organizational effectiveness can be sorted according to three axes, or competing value dimensions (see Figure 1).

As can be seen in Figure 1, there are two primary axes around which the criteria of performance are organized. The vertical dimension suggests that people differentiate criteria according to the degree of flexibility or control that is implied. Hence, at the top of the diagram the emphasis is on decentralization and differentiation. The effectiveness criteria we find at this end of the continuum are value of human resources, adaptability and

BEST COPY AVAILABLE

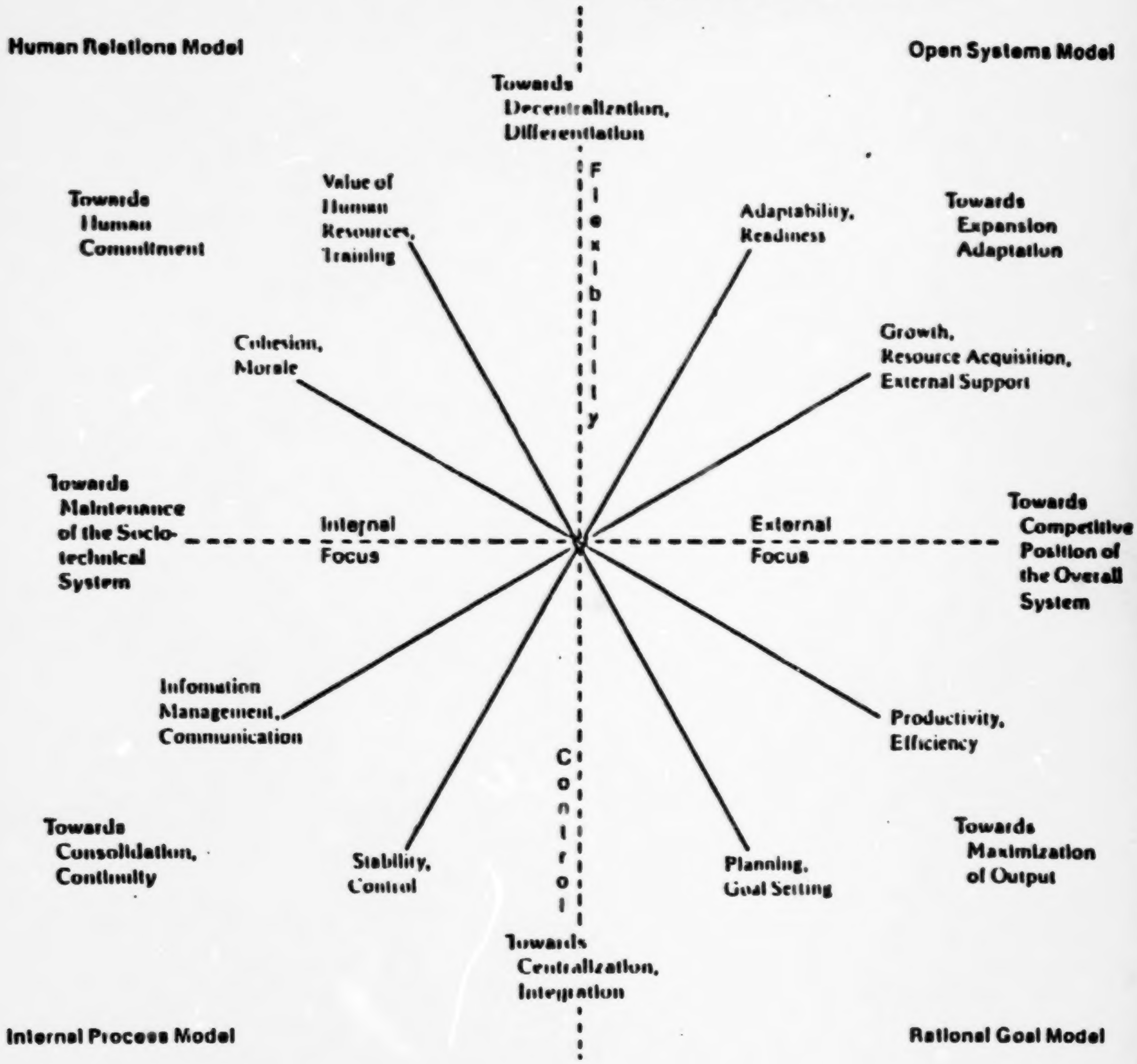

Human Relations Model
Open Systems Model
Towards Decentralization, Differentiation
Flexibility
Towards Human Commitment
Value of Human Resources, Training
Adaptability, Readiness
Towards Expansion Adaptation
Cohesion, Morale
Growth, Resource Acquisition, External Support
Towards Maintenance of the Socio-technical System
Internal Focus
External Focus
Towards Competitive Position of the Overall System
Infomation Management, Communication
Productivity, Efficiency
Control
Towards Consolidation, Continuity
Stability, Control
Planning, Goal Setting
Towards Maximization of Output
Towards Centralization, Integration
Internal Process Model
Rational Goal Model

FIGURE 1 THE COMPETING VALUES MODEL OF ORGANIZATIONAL EFFECTIVENESS

readiness. At the bottom of the diagram the emphasis is on centralization and integration. Effectiveness criteria at this end of the continuum are concepts like stability, control, planning and goal setting. The horizontal axis ranges from a concern with external criteria related to the competitive position of the overall system, to internal criteria related to the maintenance of the socio-technical system. Hence on the right are such criteria as productivity and efficiency, external support, and resource acquisition and growth. On the left are cohesion, morale, information management and communication.

While Figure 1 is a two dimensional graphic, the data suggest that the criteria of effectiveness have a three dimensional organization. The third dimension is related to the difference between short term processes and long term outcomes. Thus planning and goal setting are viewed as a means to productivity and efficiency; adaptability and readiness are viewed as a means to growth, resource acquisition and external support; information management and communication are viewed as a means to stability and control; cohesion and morale are viewed as a means to increasing the value of human resources.

The scheme is called the competing values framework because the criteria seem to carry a conflictual message. We want our organizations to be adaptable and flexible, but we also want them to be stable and controlled. We want growth, resource acquisition, and external support, but we also want tight information management and communication. We want an emphasis on human resources, but we also want an emphasis on planning and goal setting. While none of these pairs is mutually exclusive in an empirical sense, they tend to reflect different orientations or perspectives in a cognitive sense.

Because the competing values framework consists of bipolar relationships, it has a clearly defined domain. These relationships consist of juxtaposed dimensions of effectiveness criteria which act as conceptual oppositions. They are not opposites in a mutually exclusive sense (i.e., short-tall, fat-thin). They are concepts which are cognitively distant from one another. A curious aspect of this specification of competing values is that it makes clear both the differences and the similarities in organizational thinking; it provides a simultaneous integration and differentiation. This clarification of competing values can be seen in the three basic axes, discussed above, and also in the four models represented in the four quadrants. In examining the criteria associated with each of the four quadrants, it becomes clear that the criteria of effectiveness graphically define the development of organizational theory. As discussed above, different periods of organizational theory have highlighted different aspects of organizational functioning. While various attempts at integrating the literature (Scott, 1977; Seashore, 1979; Cameron, 1979) have identified these periods, they have not shown the relationships between models. The competing values framework makes clear these relationships.

The human relations model places a great deal of emphasis on flexibility and internal focus, and stresses such criteria as those in the upper left quadrant: cohesion and morale (as means) and human resource development (as ends). The open systems model places a great deal of emphasis on flexibility and external focus, and stresses such criteria as those in the upper right quadrant: flexibility and readiness (as means) and growth, resource acquisition and external support (as ends). The rational goal model places a great deal of emphasis on control and external focus, and stresses such criteria as those in the lower right quadrant: planning and goal setting (as means) and productivity and efficiency (as ends). The internal process model is represented in the lower left quadrant. It places a great deal of emphasis on control and internal focus, and stresses the role of information management and communication (as means) and stability and control (as ends).

Because each model is embedded in a particular set of competing values, each has a polar opposite with contrasting emphasis. The human relations model with effectiveness criteria reflecting flexibility and internal focus stands in stark contrast to the rational goal model's value-based stress on control and external focus. The open systems model, based on flexibility and external focus, runs counter to the internal process model, which reflects a focus on control and internal focus. Parallels among the models are also important. The human relations and open systems models share an emphasis on flexibility. The open system and rational goal models are primarily concerned with an external focus. The rational goal and internal process models are rooted in the value of control. Finally, the internal process and human relations models share an internal focus.

Appendix 2

A Structure for the Outcomes of Postsecondary Education

from Oscar T. Lenning, Yong S. Lee, Sidney S. Micek, and Allan L. Service, 1977.

By "educational outcomes" we mean more than the effects of postsecondary education on students and the further impacts of those on others, including society in general. As used here, "educational outcomes" refer to any results or consequences of an educational institution and its programs. The outcomes may be direct results of institutional activities, such as academic degrees, technological discoveries, student knowledge and skills, or institutional staff salaries. Conversely, there may be later consequences of those outcomes, such as individual prestige, higher family income, more educated work force, or effects of staff salaries on the local economy.

Educational activities focus on intended outcomes, but unintended or unplanned outcomes should also be of concern to educators. Unexpected or unintended outcomes can occasionally become more important than the intended outcomes. Some unintended outcomes are considered to be of positive value by most people (for example, increased student ingenuity or creativity), but other kinds of outcomes are considered to be detrimental (for example, increased drug use or political radicalism).

Actually, the generic concept of "educational outcome" is a neutral one, separated from any inherent value status. But people attach value connotations to the outcomes, and even the most universally accepted educational outcomes are probably seen as negative by some people. [page 1]

A primary objective of the NCHEMS Outcome Structures and Measure project was development of a practical and useful classification system that encompasses the full range of outcomes. Since any such structure should come out of a conceptual and theoretical base, development required some resolution of the difficult question of exactly what should be included under the rubric "outcomes of postsecondary education" and what should be excluded. At the present time, the term "outcome" means different things to different people. For some the term denotes "output" (Goodman, 1971) or "planned output" (Hoenack et al, 1974). For others the same term signifies "end results" or "ultimate consequences" (Robinson and Majak, 1967; most PPBS literature). For still others the term stands for intended benefits (Hitch, 1970; Becker, 1964) or conversely for unintended effects or "side effects" (Bauer, 1966; Cook and Scioli, 1972). "Productivity" -- maximizing outputs obtained from a given amount of resource inputs or minimizing inputs needed to produce a given amount of output -- was the concept of "outcome" emphasized by Hitch (1970) and Christenson (1969), while Astin (1970) has focused not on maximizing outputs with respect to inputs but on comparing output conditions, characteristics, and levels to those at input (value added). Other frequently used synonyms for "outcomes" are "performance," "efficiency," "effectiveness," and "goals and objectives" (that have been achieved). A survey of the literature on program evaluation and policy analysis clearly indicated that up until the present time there has been no generally accepted concept that serves to define the facts known as "outcomes" and to discriminate among the potentially different types or classes of outcome measures. Widespread agreement on the need for some unifying concept has not been sufficient to overcome the theoretical complexity that characterizes the issue (Barton, 1961; Easton, 1965; Goodman, 1971; Schalock et al, 1972; Micek and Wallhaus, 1973). [page 5]

Traditionally, the programmatic or functional activities of an educational institution and its components that produce and facilitate (or are intended to produce and facilitate) particular outcomes have been divided into three functional areas: instructional and socialization activities, research and scholarship activities, and public service activities. Instruction and socialization are the formal (curricular) and informal activities provided to help bring about student growth and development, that is, knowledge, understanding, competencies, attitudes, appreciations, habits, and so forth. Over the years, a wide variety of programs and methodologies have been tried in different settings to stimulate student growth and development.

Research and scholarship activities are conducted by units or individual staff members within the institution with the aim to develop new knowledge or art forms. The new knowledge, techniques, or forms of expression can be designed either to have practical application (for example, "applied research") or merely to be new (for example, "pure research").

Public service activities are those activities that aim to benefit directly or have an impact on the communities or groups of individuals residing within the service area of the institution. Many public service activities are instructional in nature, such as extension courses and other community education services. Others are advisory or entertainment, such as extension advisory and consulting services for individuals and businesses, community problem analysis services, and cultural and entertainment events or facilities for the community.

It should be noted that these three traditional focuses of postsecondary education institutions correspond to the primary programs of the NCHEMS Program Classification Structure (PCS), outlined in Figure 1. Similarly, the six support programs of the PCS (academic support, student service, institutional administration, physical plant operations, student financial support, and independent operations), could be expected to also generate educational outcomes. [page 12]

The structure discusses six attributes or characteristics of an "educational outcome" plus five other factors important to an understanding of this concept. These attributes and factors are responses to a number of questions about outcomes. The questions, the attributes and factors associated with each, and what they mean are summarized below:

A. What are the characteristics and makeup of an "educational outcome"?

Form -- the basic configuration of the outcome as it is observed and/or measured. Outcomes can be separated into products, events, and conditions.

Change Status -- Whether the outcome results in maintaining (preserving, replenishing, reproducing, or stabilizing) or changing (modifying, enriching, restructuring, or replacing) the existing condition or state of affairs.

Focus -- the basic, specific "what" that is maintained or changed to constitute the outcome of concern (knowledge, understanding, skills, attitudes, roles, certification status, jobs, income, social conditions, technology, art forms, and so forth).

Neutrality -- although people attach positive or negative value connotations to specific outcomes, the generic concept of "outcome" is a neutral one separated from any inherent value status.

Measurability -- the ease with which the outcome can be quantified or measured. Some outcomes are easily measured; others are difficult to measure.

Output/impact -- Whether there is a direct link between the outcome and its producer/facilitator (output), or an indirect link between the outcome and its producer/facilitator through outputs and intermediary impacts (impact). [page 1]

B. **Which institutional resources and activities are combined, and in which way , to bring about the outcome(s) of concern?**

Producer/Facilitator -- the programmatic or functional activities of an educational institution or its components that produce and facilitate, or are intended to produce and facilitate, particular educational outcomes.

C. **For whom is the outcome intended, or who actually received or was affected by it?**

Audience -- the persons, groups, organizations, communities, aggregations of people with common observable characteristics, activities or other entities that receive and/or are affected by (or are intended to receive or be affected by) the outcome of concern.

D. **Why will, or did, the outcome occur?**

Intended/Unintended -- whether the outcome was designed or planned to occur or whether it just happened. Included are the positive, negative, or neutral value connotations attached to an outcome by different people and groups, and the "exchange value" perceived for the outcome by its producer/facilitator.

E. **Where** will, or did, the outcome occur?

Functional Area -- the functional areas within the various audience entities that are being affected by (or that are meant to be affected by) the outcome, such as economic, educational/technological, political, and social/cultural/personal.

F. **When** will, or did, the outcome occur?

Time -- the time, or expected time, of occurrence of an outcome (such as prior to graduation, more than one year after graduation) and the duration or persistence of the outcome (how long it lasts).

Several of these attributes and factors served as a basis for dimensions of the Outcomes Structure described in Chapter 3: audience, change status, focus, and time. Others have implications for using the Outcomes Structure (for example, in developing lists of outcomes for different cells of the Structure) and in analysis of outcomes information. [page 20]

By definition, a classification system (or structure) for outcomes consists of one or more dimensions divided into associated categories and subcategories for organizing, differentiating, and showing relationships among outcomes. A large number of varied attempts have been made using many different dimensions to formulate classification systems for educational outcomes and such outcome-related concepts as goals and objectives. A list of over eighty such classifications found by Lenning (1977) is in Appendix A. All these classifications say something about outcomes and about organizing outcomes, and provided useful input to the current NCHEMS effort in this area, but several problems are present. Many of the classifications found appeared to be quite arbitrary in their content and organization, and had their basis in other than empirical studies. Those that are empirically based tend to be narrow in their area of focus, for example, classifying only particular kinds of student outcomes. Furthermore, most of the broader classifications consist only of simple lists of categories, and those remaining tend to go into little if any definitional detail. None of the broadly focused outcome classification systems cover the full range of potential postsecondary education outcomes. Therefore, this new attempt was made to structure outcomes in a useful way, and the proposed system is described in this chapter.

In certain past attempts to structure educational outcomes, educators with particular philosophical and theoretical orientations have felt that the structure favored other philosophies or theories of education and was biased against their own because of the nature of its organization and/or content. Therefore, special care was taken to eliminate value and philosophical connotations as much as possible from the NCHEMS Structure. It is probably impossible to eliminate such bias completely, however.

Appendix 3

Compendium of Measures

1000 Goal Achievement

- 1100 Economic Outcomes
  - 1110 Economic Access and Independence
    - 1111 Economic Access
      1 2 270 271 272 273 276
    - 1112 Economic Flexibility, Adaptability, and Security
      3 4 274 275
    - 1113 Income and Standard of Living
      5 6
  - 1120 Economic Resources and Costs
    - 1121 Economic Costs and Efficiency
      7 8
    - 1122 Economic Resources (including employees)
      9 10
  - 1130 Economic Production
    - 1131 Economic Productivity and Production
      11 12
    - 1132 Economic Services Provided
      13
  - 1140 Other Economic Outcomes
- 1200 Human Characteristic Outcomes
  - 1210 Aspirations
    - 1211 Desires, Aims, and Goals
      14 15 16 253
    - 1212 Dislikes, Likes, and Interests
      17 18 19

1213 Motivation or Drive Level
20 21

1214 Other Aspirational Outcomes

1220 Competence and Skills

1221 Academic Skills
22 23 24

1222 Citizenship and Family Membership Skills
25 26 27

1223 Creativity Skills
28 29

1224 Expression and Communication Skills
30 31 32

1225 Intellectual Skills
33 34 264 265

1226 Interpersonal, Leadership & Organizational Skills
35 36 37 38

1227 Occupational and Employability Skills
39 40 41 266

1228 Physical and Motor Skills
42

1229 Other Skill Outcomes

1230 Morale, Satisfaction, and Affective Characteristics

1231 Attitudes and Values
43 44 45 46 252 254 269

1232 Beliefs, Commitments and Philosophy of Life
47 48 49 50

1233 Feelings and Emotions
51 52 53

1234 Mores, Customs and Standards of Conduct
54 55 56 57

1235 Other Affective Outcomes

1240 Perceptual Characteristics

1241 Perceptual Awareness and Sensitivity
58 59

1242 Perception of Self
60 61

1243 Perception of Others
62 63

1244 Perception of Things
64 65

1245 Other Perceptual Outcomes

1250 Personality and Personal Coping Characteristics

1251 Adventurousness and Initiative
66 67 68

1252 Autonomy and Independence
69 70

1253 Dependability and Responsibility
71 72

1254 Dogmatic/Open-Minded,Authoritarian/Democratic
73 74

1255 Flexibility and Adaptability
75 76 77

1256 Habits
78 79

1257 Psychological Functioning
80 81 82

1258 Tolerance and Persistence
83 84

1259 Other Personality and Personal Coping Outcomes

1260 Physical and Physiological Characteristics

- 1261 Physical Fitness and Traits
  85 86
- 1262 Physiological Health
  87 88
- 1263 Other Physical or Physiological Outcomes

1270 Status, Recognition, and Certification

- 1271 Completion or Achievement Award
  89 90 91 92 93 94
- 1272 Credit Recognition
  95 96 97 98
- 1273 Image,Reputation, or Status
  99 100 101 102 103
- 1274 Licensing and Certification
  104 105 106 107 198
- 1275 Obtaining a Job or Admission to a Follow-up Pgm
  108 109 110 111 112
- 1276 Power and/or Authority
  113 114 115 116
- 1277 Job, School, or Life Success
  117 118 119
- 1278 Other Status, Recognition&Certification Outcomes

1280 Social Activities and Roles

- 1281 Adjustment to Retirement
  120 121
- 1282 Affiliations
  122 123
- 1283 Avocational and Social Activities and Roles
  124 125

1284 Career and Vocational Activities and Roles
126 127 277

1285 Citizenship Activities and Roles
128 129 130

1286 Family Activities and Roles
131 132

1287 Friendships and Relationships
133 134

1288 Other Activity and Role Outcomes

1290 Other Human Characteristic Outcomes

1300 Knowledge, Technology, and Art Form Outcomes

1310 General Knowledge and Understanding (K & U)

1311 K & U of General Facts & Terminology
135 136

1312 K & U of General Processes
137 138

1313 K & U of General Theory
139 140

1314 Other General Knowledge & Understanding

1320 Specialized Knowledge and Understanding (K & U)

1321 K & U of Specialized Facts & Terminology
141 142 250 251

1322 K & U of Specialized Processes
143 144 199 251

1323 K & U of Specialized Theory
145 146 251

1324 Other Specialized Knowledge & Understanding

1330 Research and Scholarship

1331 Research & Scholarship Knowledge & Understanding
147 148 200 249

1332 Research and Scholarship Products
149 150

1340 Art Forms and Works

1341 Architecture
151 152

1342 Dance
153

1343 Debate and Oratory
154 155

1344 Drama
156 157

1345 Literature and Writing
158 159

1346 Music
160 161

1347 Painting, Drawing, and Photography
162 163

1348 Sculpture
164 165

1349 Other Fine Arts

1350 Other Knowledge, Technology and Art Form Outcomes

1400 Resource and Service Provision Outcomes

1410 Provision of Facilities and Events

1411 Provision of Facilities
166 167 284

1412 Provision or Sponsorship of Events
168 169

- 1420 Provision of Direct Services
  - 1421 Teaching
    170 278
  - 1422 Advisory and Analytic Assistance
    171 172
  - 1423 Treatment, Care, and Referral Services
    173 174
  - 1424 Provision of Other Services
    175 280 281 282
- 1430 Other Resource and Service Provision Outcomes
  176

1500 Other Maintenance and Change Outcomes

- 1510 Aesthetic-Cultural Activities, Traditions & Conditions
  177
- 1520 Organizational Format, Activity and Operation
  178
- 1530 Other Maintenance and Change

2000 Managerial Processes

- 2100 Planning
  330 331 332 333 334 358
- 2200 Organizing
  337 338 339 340 341 342
- 2300 Directing
  347 351 352 353 354 355 356 357 359 360
- 2400 Control
  335 336
- 2500 Staffing
  343 344 345 346 348 349 350

3000 Organizational Climate

3100 Autonomy
405

3200 Structure
405

3300 Consideration and Support
405

3400 Synergy
354 405

3500 Reward Orientation
352 353 405

3600 Openness vs. Defensiveness
355 405

3700 Participation vs. Decision Centralization
351 405

3800 Educational Climate
404

4000 Environmental Adaptation

4100 Efficiency
193 226 227 228 229 234 235 243 244 245 246 247
248 258 259

4200 Productivity
194 195 198 200 217 234 255 256 257 264 293 294
295 305 391

4300 Bargaining Position

4310 Tangible Resources

4311 Physical Plant
224 236 237 238 239 242 310 311 312 374 399

4312 Support Services
192 196 197

4313 Facilities
201

4314 Staff
225 230 231 232 233 298 299 300 301 302 303 304
324 378 398

4315 Students
180 181 182 184 185 186 187 188 189 190 202 203
204 205 206 207 261 262 279 293 294 295 297 305
323 325 326 328 365 367 369 372 376 377 403 183

4316 Finances
208 209 210 211 212 213 214 215 216 217 218 219
220 221 222 223 296 306 307 308 309 310 312 313
314 315 316 317 318 319 320 321 322 329 372 373
375 378 381 382 384 385 386 392 393 394 401 402
406 407 408 409 410

4317 Research
400

4318 Educational Programs
219 327 328 379 383 387 390 391 395 396 397

4320 Intangible Resources
196 197 218 260 280 281 282 283 285 286 287 288
289 290 291 292 323 325 326 374

4400 Client Satisfaction
182 190 191 193 260 263 265 266 269 380 390 391

4500 Capacity to Test Reality
267

4600 Control Over The Environment
213 214 215 263 303 371 373 406 407 408 409 410

4700 Flexibility/Readiness
213 214 215 231 232 233 234 235 238 239 240 241
244 245 246 247 248 296 297 298 299 300 301 302
303 306 307 308 309 310 311 312 313 314 315 316
317 318 319 320 321 322 323 324 325 326 327 328
329 361 362 363 364 365 366 367 368 369 370 371
373 375 377 379 380 381 382 384 385 386 387 388
389 392 393 394 406 407 408 409 410

Appendix 4
Measures and Indicators of Organizational Effectiveness

Indicator ID#	Indicator
1	Percentage of students obtaining their first FT job in the field of their choice within a specified time after graduation.
2	Number of alternatives for an entry level job open to minority group graduates compared to minority group nongraduates.
3	Geographic mobility of college graduates compared to those not attending college.
4	Self-report of college graduates about the economic security for them and their families, and the contribution of college to this.
5	Amount of annual and lifetime earnings of those attending college compared to those not attending college.
6	Average student and/or former student reported scores on scales measuring perceptions and evaluations of their current and desired socio-economic level.
7	The absenteeism and tardiness on-the-job of college graduates as compared to nonstudents.
8	The number of firms that use the college degree as an inexpensive screening device that allows them to hire qualified employees at minimum initial cost to the firm.
9	Percentage of college graduates employed in management positions within a specified time after graduation.
10	Average number of patents and/or copyrights received per student, former student, and/or faculty member.
11	Percentage of college graduates who can adequately do their personal typing and complete their own income tax forms as a result of having attended college.
12	Expert judges' ratings of the amount of increased worker production and higher worker motivation that results from having attended college.
13	Dollar amount of goods and services bought in the local community by the institution, its staff, and its students. Number of hours of consultation in the business area provided to area companies and institutions by the university's college of business.

14 Changes in observed desires from college entrance to graduation.

15 Changes in the reported aspirations for graduate school as a class proceeds through undergraduate school.

16 Self-report of changes in goals and aspirations as a result of college.

17 The reported likes and dislikes of persons before college as compared to after graduation, and comparison with such change over the same period of time for those the same age not attending college.

18 Score or change in score on an interest inventory, e.g., Strong Vocational Interest Blank, Kuder General Interest Survey, Kuder Occupational interest Survey, ACT interest inventory.

19 Self-report of changes in interests as a result of college.

20 Score or change in score on an instrument that measures "need for achievement" or "achievement motivation," e.g., the Strong Vocational Interest Blank Academic Achievement Scale, the College Student Questionnaire Motivation for Grades Scale, the California Psychological Inventory Achievement Scales, Personal Value Inventory.

21 Self-report of changes in motivation level as a result of college.

22 Grades earned when the effect of ability, motivation, and other such factors have been controlled.

23 Persistence in college when the effects of ability, motivation, and other such factors have been cancelled out.

24 Score or change in score on a test of study skills, e.g., Brown-Holtzman Survey of Study Habits and Attitudes, Comprehensive Test of Basic Study Skills.

25 Self-report of abilities pertaining specifically to citizenship and home membership that college accentuated.

26 Evaluation by others of citizenship and home membership skills mastery exhibited.

27 Score or change in score on the Vineland Social Maturity Scales.

28 Score or change in score on a test that measures originality and creative ability, e.g., Minnesota Test of Creative Thinking, Test of Creative Ability, Guilford's Alternate Uses Test, Sixteen Personality Factors Questionnaire Creativity Scale.

29 Evaluation by judges of creative ability demonstrated in a building or forming task.

30 Score or change in score on tests that measure the ability to communicate or express oneself.

31 Judges' rating in a debate or speech contest.

32 Judges' rating of expression in a music, art, or ballet contest.

33 Score or change in score on a test that measures ability to analyze and solve problems and to make inferences, e.g., California Test of Mental Maturity, Watson-Glazer Critical Thinking Appraisal, California Psychological Inventory Intellectual Efficiency Scale.

34 Self-report of changes in analytical ability as a result of college.

35 Leadership awards.

36 Self-perceptions and evaluation of interpersonal and leadership ability.

37 Perceptions by judges of interpersonal and leadership skills.

38 Score or change in score on a test that measures leadership and interpersonal ability, e.g., California Psychological Inventory Leadership Scale, Chapin Social Insight Scale.

39 Spatial relations test scores for someone who is, or is going to be, an artist.

40 Demonstrated ability in writing FORTRAN or COBOL for someone who is, or is going to be, a computer programmer.

41 Score or change in score on the Bennett Mechanical Comprehension Test.

42 Judges' scores on skill events in athletic competition such as gymnastics, diving, and figure skating.

43 Score or change in score on an attitude scale, e.g., Thurstone and Chave's Scale for Measuring Attitudes Toward the Church, College Student Questionnaire Part I, Adorno Ethnocentrism Scale, Shaw and Write Scales for the Measurement of Attitudes.

44 Self-report of one's attitudes and the effect of college on them.

45 Score or change in score on an instrument that assesses values, e.g., Alport-Vernon-Lindsey Study of Values, Differential Value Profile, Work Values Inventory.

46 Self-report of one's values and the effect of college on helping to clarify them.

47 Score or change in score on instruments that assess beliefs, e.g., Harvey's Conceptual Systems Test, Inventory of Beliefs.

48 Self-report of one's beliefs and commitments and the effect of college on them.

49 The membership and participation in, and support of, a particular religious organization or cause prior to as compared with after college.

50 Self-report of one's philosophy of life and the effect of college on clarifying and organizing it.

51 Openness and acceptance of feelings before college compared to after college.

52 Development of an appreciation of different cultures and a wide range of human values as a result of college.

53 Greater reported satisfaction with life as a result of college.

54 Self-report of the effect of college on assimilation or internalization of the customs of community or society.

55 Score or change in score on the California Psychological Inventory Socialization Scale.

56 The adherence to particular mores or social customs prior to college as compared to after college.

57 The amount of subjectivity and emotion guiding one's standards of conduct prior to college as compared to after college.

58 Increased sensitivity to needs and emotional cues provided by others.

59 increased alertness to the opportunities confronting one.

60 Development of positive self-regard and self-confidence as a result of college.

61 Score or change in score on a self-concept scale, e.g., Adjective Check List, California Psychological Inventory Self Acceptance Scale, Tennessee Self Concept Scale.

62 Reports by observers about how a person's respect for others has changed as a result of college.

63 Self-report of how one's view of others has changed as a result of college.

64 Increased respect for the ideas of others as result of college.

65 Movement as a result of college experiences from seeing things as all "black and white" to complex "grays".

66 Reports by impartial observers of changes in initiative that seem to have resulted from college attendance.

67 Self-report of the effect of college on one's willingness to take a chance, e.g., to take an educated guess on an exam.

68 The frequency that one exhibits speaking out on issues as the college career progresses.

69 Score or change in score on personality scales that measure autonomy and independent, e.g., Sixteen Personality Factors Questionnaire Group-Dependent vs. Self-Sufficient Scale, Edwards Personality Inventory Independent in His Opinions Scale, College Student Questionnaire Independence Scales, Omnibus Personality Inventory Autonomy Scale.

70 Self-report of willingness to volunteer or "stand up for one's rights" and the effect of college attendance on such willingness.

71 Reports by observers of changes in dependability and responsibility that have occurred during college.

72 Score or change in score on scales that measure dependability and responsibility, e.g., California Psychological Inventory Responsibility Scale, Edwards Personality Inventory Assumes Responsibility Scale, Sixteen Personality Factors Questionnaire Expedient vs. Conscientious Scale.

73 Reports of expert observers about changes in open-mindedness that have taken place during college.

74 Score or change in score on a scale that measures dogmatism and/or authoritarianism, e.g., Rokeach Dogmatism Scale, California Psychological Inventory Dominance Scale, Omnibus Personality Inventory Religious Orientation Scale.

75 Score or change in score on a scale that measure flexibility, e.g., California Psychological Inventory Flexibility Scale, Omnibus Personality Inventory Practical Outlook Scale, Sixteen Personality Factors Questionnaire Practical vs. Imaginative Scale.

76 Reports by observers of changes in adaptability and flexibility that have occurred during college.

77 Self-report of the effect of college on adaptability and flexibility.

78 Observations by others of changes in habit orientation that have occurred during attendance.

79 Self-report of changes in habits that have resulted from college.

80 The amount of realization of one's actual strengths and weaknesses, and of what is reality.

81 Score or changes in score on an instrument that measures psychological adjustment, e.g., Minnesota Multiphasic Personality Inventory, Sixteen Personality Factors Questionnaire, Moody Problem Check List.

82 Reports by expert observers about changes in the psychological functioning of individuals that have occurred during college attendance.

83 Observations by others of changes in tolerance and persistence during college.

84 Score or changes in score on an instrument that measures tolerance and persistence, e.g., Edwards Personality Inventory Persistence Scale, California Psychological Inventory Tolerance Scale.

85 Score or change in score on physical fitness tests, e.g., AAHPER Youth Fitness Tests, Basic Fitness Tests.

86 Self-report of "feeling in better physical shape" as a result of college.

87 Medical doctor's health physical examination report at college entrance compared to at college graduation.

88 Self-report of the effect of college attendance on how well alumni take care of their bodies.

89 An honorary degree.

90 Graduation diploma.

91 Alumni achievement award.

92 Sales award or a job promotion.

93 Danforth Fellowship Award.

94 Being named a Rhodes Scholar.

95 Graduate school grades.

96 Credit hours given for completing a course.

97 By-line credit for a movie, play, book, or article.

98 Financial credit rating issued by a bank or credit bureau.

99 Being on the social register.

100 Being listed in Who's Who.

101 Oral and written acknowledgments from others.

102 Being interviewed by the press, radio, or TV.

103 Writing an autobiography that is published or having a biography written about you.

104 Entry into the state bar.

105 Passing a cosmetology licensing exam.

106 Being a certified public accountant.

107 An insurance company that has been licensed to sell in a state.

108 Entrance to a university after graduation from a community college.

109 Entrance to law, medical, or graduate school.

110 Being selected by the civil service.

111 Being selected for a company executive position.

112 Being hired in the special field for which the training applied.

113 Appointment or election to a position of authority.

114 Earning promotion to a position of authority.

115 Influencing important community or public decisions.

116 Getting acknowledged credit for the important job having gotten done.

117 Self-report of success in career.

118 Teacher's rating of success in graduate school.

119 Employer's rating of overall on-the-job performance.

120 Percentage of college education retirees reporting productive retirement years compared to reports of those who never attended college.

121 Self-report of the effect of having attended college on the retirement years.

122 Number of affiliations and changes in affiliations for college graduates as compared to those never attending college.

123 Self-report of the effect of having attended college on the affiliations sought and on the affiliations won.

124 The social roles and avocations of college graduates as compared to those who never attended college.

125 Self-report of the effect of having attended college on the avocational and social roles sought, and on those practices.

126 The career roles of college graduates as compared to those who never attended college.

127 Reports of employers concerning the advancement and roles of college trained employees versus the advancement and occupational roles of those who never attended college.

128 Percent voting in a municipal or state election.

129 Financial and other contributions given to service organizations.

130 Percent running for public office or campaigning for someone who is.

131 The family roles of college graduates as compared to those who never attended college.

132 Self-report of effect of the college on the roles played in one's family.

133 Characteristics of friends and relationships of college educated people versus those never attending college.

134 Self-report of the effect of college on friendships and social relationships.

135 Students' scores or changes in score on standardized or classroom tests that measure knowledge and understanding of general terminology and/or facts. For example, the Miller Analogies Test focuses entirely on knowledge and understanding of general terminology, and tests like the College Level Examination Program (CLEP) or the Graduate Record Exam (GRE) general exam include coverage of general terminology and facts.

136 Students' self-report of knowledge and understanding about general terminology and facts.

137 Students' scores or changes in score on standardized or classroom tests measuring comprehension of general conventions, processes, and methodologies.

138 Students' grades in a general application survey course.

139 Students' scores or changes in score on standardized or classroom tests measuring comprehension of general theories in a broad field of study.

140 Students' grades in a general survey course on theories of philosophy.

141 Students' scores or changes in score on standardized or classroom tests that measure knowledge and understanding in a narrow, specialized area of study. Professional certification and licensing exams usually focus on this type of knowledge, as do tests like the College Level Examination Program (CLEP) subject exams or the Graduate Record Exam (GRE) area exams.

142 Students' self-report of knowledge and understanding about specialized terminology and facts.

143 Students' scores or changes in score on standardized or classroom tests measuring comprehension of conventions, processes, methodologies, and techniques unique to particular specialized professions or disciplines.

144 Students' grades in a specialized professional course or program.

145 Students' scores or changes in score on standardized or classroom tests measuring comprehension of specialized theoretical formulations and models.

146 Students' grades in a course that goes into depth about one or more theories or models unique to a specialized discipline or profession.

147 Average number of basic research publications, applied research publications, textbooks, or monographs, etc., per student, former student, and/or faculty member over a specific period of time.

148 Number of faculty members and/or former students in the sciences listed in American Men of Science.

149 Average number of patents and/or copyrights received per student, former student, and/or faculty member over a given period of time.

150 Average number of awards and citations received per student, former student, and/or faculty member (over a given period of time) for discovery of development of technological products.

151 Number of architectural works completed by students, former students, and/or faculty.

152 Number of awards and other recognitions received for architectural works on the campus commissioned by campus officials.

153 Number of students involved in dance auditions and public performances.

154 Competition record over a period of years of the college's debate team.

155 The average number of graduates each year who go on to some kind of oratorical career.

156 The number of students who enter a professional acting career, and the number acting on an amateur basis.

157 The number of drama performances put on for the local community each year.

158 The average number of literary works each year published by students, former students, and/or faculty members.

159 The number of students and faculty each year who have entered a formal state or national writing competition.

160 The number of musical productions put on each year by the college that are open to the public.

161 The number of students involved in public music recitals and other performances.

162 The number of paintings, and their quality in the campus art gallery.

163 The number of awards won over a certain period of time for pictorial works by students, former students, and faculty members.

164 The number of sculptures that have been commissioned by the college and placed throughout the campus.

165 The forms of sculpture that have been developed on the campus.

166 Number of facilities made available to the students during a particular period of time.

167 Total number of hours each facility was used by people in the community, and the number of people-hours of use over a specific period of time.

168 The number of people who attended athletic events, cultural events, or other events provided and/or sponsored by the college in any one year.

169 The number of column inches of newspaper coverage received by specific events in local, regional, and national newspapers.

170 Average number of courses taught and number of contact hours per semester in the regular program. Extension courses provided in any one calendar year.

171 Number of advisory and analytic assistance services offered to students, staff, and/or to the public.

172 Number of person-hours spent by staff in providing this assistance over a specific period of time.

173 The treatment, care, and referral services offered by the institution and its staff, and health services, day care for children of working mothers, counseling, crisis referral, and drug treatment and the amount these services are used.

174 The reported satisfaction of users of these services with the treatment and care received.

175 Provision of Other Services--An example would be direct civic leadership provided to the community. Another example would be offering keypunching service.

176 Other Resource and Service Provision Outcomes--an example would be the attention and good will the college draws to the local community because it is located there.

177 Aesthetic-Cultural Conditions--Preserving or bringing about changes in tastes, level and kinds of aesthetic-cultural emphasis, aesthetic-cultural availability and opportunities, aesthetic-culture activity and participation, etc.

178 Organizational Format, Activity, and Operations--For organizations, groups, and systems (and their components), maintenance or change in organizational communications, operational methods and interaction, operational effectiveness, organizational relationships, organizational arrangement and configuration, organizational activities and programs, and other such organizational characteristic outcomes.

179 Other Maintenance and Change--Outcomes not covered by any of the other subcategories of "Maintenance" and "Change" in this dimension of the Outcomes Structure. An example might be "destruction of life support in the environment".

180 Potential Applicants to Postsecondary Education: The estimated number of individuals who might be enrolled in (i.e., participate in) various postsecondary education programs and/or activities if available in a particular region within a specified time period.

181 Applicants to Postsecondary Education Programs and/or Activities: The number of different individuals actually making applications (institutionally defined) for admission into particular postsecondary education programs and/or activities in a particular region within a specified time period, without regard to available openings or the applicants' qualifications.

182 Postsecondary Education Applicants Accepted: The total number of individual applicants for admission to a particular postsecondary education institution and/or program or activity to whom formal notification of acceptance is given, within a specified time period.

183 High School Graduates: The number of students who satisfactorily complete (i.e., graduate from) a secondary education program in a particular region within a specified time period, usually an academic year.

184 High School Graduates - Continuing to Postsecondary Education: The number of "High School Graduates" [2070] who continue their education in a postsecondary education program or activity in a particular region within a specified time period.

185 First-time Entering Students - Undergraduate: The (headcount) number of students who enter a particular postsecondary education reporting unit at the undergraduate level for the first time, regardless of student loads, with less than one semester (or semester equivalent) of academic credit earned at another reporting unit which is applicable for credit at the reporting unit of current enrollment, within a specified time period.

186 First-time Entering Students - First Professional: The (headcount) number of students who enter a particular postsecondary education reporting unit at the first professional level for the first time, regardless of student loads, within a specified time period.

187 First-time Entering Students - Graduate: The (headcount) number of students who enter a particular postsecondary education reporting unit at the graduate level for the first time, regardless of student loads, within a specified time period.

188 Transfer Students: The (headcount) number of students enrolled in a particular reporting unit for the first time with one semester credit (or semester credit equivalent) or more of academic credit earned at another postsecondary education institution which is applicable for credit at the current reporting unit in a program or course of study at the same program level, within a specified time period.

189 Continuing Students: The (headcount) number of students enrolled in a particular reporting unit at a defined subsequent regular session who are continuing toward their program objective, regardless of student levels or program levels within a specified time period.

190 Readmitted Students: The (headcount) number of students who withdraw from a particular reporting unit and later return and enroll to continue or complete a postsecondary education program or course of study, and do not qualify as "Continuing Students" [2160], within a specified time period.

191 Discontinuing Students: The (headcount) number of students enrolled in one regular session and not the next at a particular reporting unit within a specified time period.

192 Financial Aid - Total: The total dollars make available to all students at a particular reporting unit for financial assistance regardless of the source(s) of funds within a specified time period.

193 Average Incurred Cost to Student - Out-of-Pocket: The average out-of-pocket costs incurred by a student enrolled at a particular reporting unit in a specific program and/or activity within a specified time period, usually an academic year.

194 Instruction Programs, Courses of Study, and Activities - Completions: The total number of students who complete or attain the objective(s) of each of the instruction programs, courses of study, and activities at a particular reporting unit within a specified time period.

195 Research Programs and Activities: An inventory of the names of all the research programs and activities at a particular reporting unit established to produce distinct research outcomes commissioned by an agency either external to the reporting unit or authorized by an organizational unit that are in progress at the reporting unit within a specified time period.

196 Public Service Programs and Activities: An inventory of the names of all the public service programs and activities to which a particular reporting unit makes available resources to produce outputs and services that are directed toward the benefit of the community, or individuals residing in the region served by the institution, within a specified time period.

197 Public Service Programs and Activities - Completions: The total number of public service programs and activities completed at a particular reporting unit within a specified time period.

198 Certification and Licensing Examinations - Attempts: The total number of students (both current and former) of a particular reporting unit who try to pass state, regional, and/or national agency certification and licensing examinations within a specified time period.

199 Certification and Licensing Examinations - Successful Completions: The total number of students (both current and former) of a reporting unit who pass state, regional, and/or national agency certification and licensing examinations within a specified time period.

200 Sponsored Project Proposals Submitted: An inventory of the names of all the sponsored project proposals (i.e., requests for funding) officially submitted by a particular institution or agents of the institution, to some external funding body for their consideration, within a specified time period.

201 Library Collections and Holdings: The total number of cataloged volumes, government documents, microfilm, and periodicals held in separately organized library units and learning resource centers over which a particular institution has primary control and administration at a specified point in time, usually the end of a fiscal year.

202 Student Enrollment - Headcount: The unduplicated count of the number of persons at a particular reporting unit who are enrolled in postsecondary education courses of study, programs, and activities within a specified time period.

203 Full-time Students: The (headcount) number of students, regardless of student level(s), courses of study, programs, or activities, who are enrolled for (i.e., registered for) at least 75 percent of the normal student load required to complete the student's program of study (whether for credit, noncredit, imputed credit, contact hours, etc.) within the normal time to complete a student program, course of study, or activity in a particular reporting unit at a specified point in time.

204 Part-time Students: The (headcount) number of students regardless of student level(s), courses of study, programs, or activities who are enrolled for (i.e., registered for) less than 75 percent of the normal student load required to complete the student's program of study (whether for credit, noncredit, imputed credit, contact hours, etc.) within the normal time to complete a student program, course of study, or activity in a particular reporting unit at a specified point in time.

205 Full-time Equivalent Students: A student count calculated by dividing the total number of student load units generated at a particular reporting unit by a standard student load measure for a specified time period (e.g., quarter, semester, academic year, fiscal year, etc.)

206 In-state Students: The (headcount) number of students who attend a particular postsecondary education institution in the state in which they legally reside at a specified point in time.

207 Out-of-state Students: The (headcount) number of students who attend a particular postsecondary education institution that is outside of the state in which they legally reside at a specified point in time.

208 Total Assets - All Fund Groups: The total dollar values (i.e., book and/or market values) of the property of all fund groups to which the right of ownership, possession, and/or legal title have been assumed by a particular institution at a specified point in time.

209 Total Liabilities - All Fund Groups: The total dollar values (i.e., book and/or market values) of the claims against assets, money owed, and debts on pecuniary obligations (i.e., liabilities) of all fund groups of a particular institution at a specified point in time which require settlement in the future.

210 Total Fund Balances - All Fund Groups: The total dollar value (i.e., book and/or market values) of the fund balances of all fund groups of a particular institution at a specified point in time.

211 Total Additions - All Fund Groups: The total dollar value of any additions to institutional resources in any fund groups of a particular institution within a specified time period.

212 Total Deductions - All Fund Groups: The total dollar value of any deductions of institutional resources from any fund groups of a particular institution within a specified time period.

213 Total Net Change in Fund Balances - All Fund Groups: The total dollar value of the next changes of the fund balances of all fund groups of a particular institution within a specified time period.

214 Total Current Funds Revenues: The total dollar amount of all unrestricted funds from gifts and other resources earned during the reporting time period and all restricted funds to the extent that such funds were expended for current postsecondary education program and activity operating purposes from the current funds by a particular institution, within a specified time period, usually a fiscal year.

215 Total Current Funds Expenditures: The total dollars expended from the current funds, by a particular institution, omitting only depreciation, to support postsecondary education programs and activities within a specified time period, usually a fiscal year.

216 Instruction Expenditures: The total dollars expended from the current funds for those program elements (e.g., courses, activities, work experiences, etc.) whose outputs may be eligible for credit in meeting specified formal curricular requirements, leading toward a particular postsecondary education degree/diploma/certificate granted by as particular institution within a specified time period, regardless of source of funding.

217 Research Expenditures: The total dollars expended from the current funds for program elements (e.g., projects, activities, work experiences, etc.) that have been specifically organized to produce research outcomes commissioned by an agency either external to a particular institution or authorized by an organizational unit in the institution within a specified time period, regardless of source of funding.

218 Public Service Expenditures: The total dollars expended from the current funds for program elements which are established to make available to the public the various resources and capabilities of a particular institution within a specified time period, regardless of source of funding.

219 Academic Support Expenditures: The total dollars expended from the current funds for all program elements carried out primarily to provide support services that are an integral part of the operations of instruction, research, and public service programs at a particular institution within a specified time period, regardless of source of funding.

220 Student Services Expenditures: The total dollars expended from the current funds for all program elements whose primary purpose is to contribute to the students' emotional and physical well-being and to their intellectual, vocational, cultural, and social development outside the context of the formal instruction program at a particular institution within a specified time period, regardless of source of funding.

221 Institutional Support Expenditures: The total dollars expended from the current funds for all program elements whose primary purpose is to maintain the organizational effectiveness and continuity of a particular institution within a specified time period, regardless of source of funding.

222 Independent Operations Expenditures: The total dollars expended from the current funds for all operations which are independent of, or unrelated to, the primary missions of a particular institution (i.e., instruction, research, and public service), although they may contribute indirectly to the enhancement of these programs, within a specified time period, regardless of source of funding.

223 Scholarship and Fellowship Expenditures: The total dollars expended from the current funds given to individuals enrolled in formal course work (whether for credit or not) in the form of outright grants and trainee stipends, at a particular institution within a specified time period, regardless of source of funding.

224 Capital Asset Expenditures: The total dollars expended from all fund groups (e.g., current funds and plant funds) for land, improvements to land, buildings, additions to buildings, and capital equipment at a particular institution within a specified time period, regardless of source of funding.

225 Compensation Expenditures: The total dollars expended from the current funds group for direct or indirect compensation to all employees of a particular reporting unit within a specified time period, regardless of source of funding.

226 Full Cost per Semester Credits: The sum of direct costs, capital costs, and allocated support costs assigned to a set of instructional activities divided by the total semester credits or semester credit equivalents generated by those instructional activities at a particular reporting unit within a specified time period.

227 Full Cost per Contact Hours: The sum of direct costs, capital costs, and allocated support costs assigned to a set of instructional activities divided by the total student contact hours generated by those instructional activities at a particular reporting unit within a specified time period.

228 Full Cost per Course Enrollments: The sum of direct costs, capital costs, and allocated support costs assigned to a set of instructional activities divided by the total course enrollments in those instructional activities at a particular reporting unit within a specified time period.

229 Full Cost per Full-time Equivalent Student: The sum of direct costs, capital costs, and allocated support costs assigned to a set of instructional activities divided by the total number of full-time equivalent students engaged in those instructional activities at a particular reporting unit within a specified time period.

230 Staff - Headcount: The unduplicated count of the number of individuals employed at a particular reporting unit at a specified point in time.

231 Full-time Staff: The (headcount) number of staff who are employed under a regular full-time contract/appointment/agreement at a particular reporting unit, or its designated agent, at a specified point in time.

232 Part-time Staff: The (headcount) number of staff employed at a particular reporting unit or its designated agent, who are not under a regular full-time contract/appointment/agreement at a specified point in time.

233 Full-time Equivalent Staff: A staff count calculated by dividing the total number of occupational workload units (e.g., hours, courses and/or activities taught, etc.) generated at a particular reporting unit by a standard occupational workload measure within a specified time period.

234 Staff Activity Workload - Average: "Full-time Equivalent Staff" [7100] divided into the total number of hours spent by them in various employment activities at a particular reporting unit within a specified time period.

235 Student - Faculty Ratio: "Full-time Equivalent Student" [5100] divided by the number of full-time equivalent faculty at a particular reporting unit within a specified time period.

236 Land Area: The total land surface owned, rented, leased, or otherwise under the control of a particular reporting unit, at a specified point in time.

237 Gross Area: The total area of buildings included within the boundaries of a particular reporting unit, at a specified point in time.

238 Assignable Area: The total area on all floors of a building at a particular reporting unit assigned to, or available for assignment to, an occupant; including every type of space functionally usable by an occupant, at a specified point in time. This excludes areas used to support the operation of a building (i.e., "Nonassignable Area" [8070][3].

239 Nonassignable Area: The total area on all floors of a building at a particular reporting unit that is not available for assignment to building occupants, but that is necessary for the general operation of the building, at a specified point in time.

240 Enrollment Capacity: The number of students and other participants that can be accommodated in programs, courses of study, and activities of a particular reporting unit, at a specified point in time.

241 Design Capacity: The total number of stations which all of the rooms of a building or physical facility at a particular reporting unit are designed to accommodate when used in the manner currently intended, at a specified point in time.

242 Estimated Replacement Value: The total estimated cost to replace the assignable floor area of buildings at a particular reporting unit at current construction costs, in accordance with current building codes, standard construction methods, and currently accepted policies and practices, at a specified point in time.

243 Average Section Size (AvSS): The average number of students in the sections of a group of programs, courses of study, and/or activities at a particular reporting unit, within a specified time period.

244 Average Square Feet per Weekly Student Hour (AvSFWSH): The average number of assignable square feet (ASF) divided by the number of regularly scheduled weekly student hours (WSH) in a room or group of rooms at a particular reporting unit, within a specified time period.

245 Average Room Utilization Rate (AvRUR): The average number of hours per week that a room or group of rooms at a particular reporting unit is scheduled for use, within a specified time period.

246 Average Station Occupancy Ratio (AvSOR): The ratio of the average proportion of stations utilized divided by the stations available for use, for all lengths of time when a room or group of rooms at a particular reporting unit is scheduled for use, within a specified time period.

247 Average Station Utilization Rate (AvSUR): The average number of hours per week that the stations in a room or group of rooms at a particular reporting unit are scheduled for use, within a specified time period.

248 Occupancy Rate: The actual number of occupants of a facility at a particular reporting unit divided by the facility's "Design Capacity" [8140], within a specified time period.

249 Student development concerning breadth of knowledge: Student scores on tests that indicate development in their breadth of knowledge about facts and principles across several broad fields of study (the humanities, the physical sciences, etc.).

250 Student development concerning depth of knowledge: Student scores on tests that indicate development in their depth of knowledge concerning facts and principles in the particular fields in which students elect to study.

251 Student success in passing certification and licensing examinations: Number and percentage of students and/or former students passing certification and licensing examinations (e.g., Bar Exam, CPA Exam, LPN Exam).

252 Areas and agents of student change during college: Student scores on a scale measuring their perceptions about how much they changed in certain areas as a result of experiences with various "change agents" (persons, events, facilities, or organizations) associated with the institution.

253 Highest degree or certificate planned: Number and percentage of students and/or former students identifying a certain degree or certificate as the highest planned.

254 Students enrolled in an organized educational activity for no credit: Number and percentage of students enrolled in organized educational activities for no credit within a certain period of time.

255 Program completers during a certain time period: The number and percentage of students completing a degree or certificate during a certain period of time; by student program.

256 Program competers who entered as transfer students: Number and percentage of students who entered as transfer students earning a degree or certificate during a certain period of time by status at entrance.

257 Degrees and certificates earned by an entering class of students: Number and percentage of students in a designated entering class who have earned a degree or certificate from the institution within a certain period of time, by type of degree or certificate, student status at entrance, and student program (field of study).

258 Time to program completion for a graduating class: Amount of time it takes a student in a particular graduating class to earn a degree or certificate, by degree or certificate type, student major program, and student status at entrance.

259 Time to program completion for an entering class: Amount of time it takes a student in a particular entering class to earn a degree or certificate, by degree or certificate type, student major program, and student status at entrance.

260 Educational program dropouts: The number and percentage of full-time students in degree or certificate programs who left the institution prior to completion of their program, by student level and exit status.

261 Students seeking additional degrees and certificates: Number and percentage of exiting or former students who have been admitted or are seeking admission to another educational program which when completed will result in a degree or certificate, by type of degree or certificate and by student major program.

262 Students working toward and receiving another degree or certificate: Number and percentage of exiting or former students who are working toward or have received another degree or certificate, by degree/diploma/certificate type and by student major program.

263 Student ability to transfer credits: Number and percentage of exiting and/or former students who have successfully transferred credits to another school.

264 Level of achievement of former students in another institution: Number and percentage of former students achieving a certain grade point average in another institution.

265 Student satisfaction with overall educational experience: The responses of students to questionnaire items measuring the degree of satisfaction with their overall college education experience.

266 Student satisfaction with vocational preparation: The responses of students to questionnaire items measuring the degree of satisfaction with their vocational preparation.

267 Student satisfaction with knowledge and skills in the humanities area: The responses of students to questionnaire items measuring the degree of satisfaction with their knowledge and skills in the humanities, including philosophy, literature, the arts, and language.

268 Student satisfaction with critical thinking ability: The responses of students to questionnaire items measuring the degree of satisfaction with their ability to formulate and analyze problems.

269 Student satisfaction with human relations skills: The responses of students to questionnaire items measuring the degree of satisfaction with their progress in achieving human relations skills.

270 Student success in obtaining first job: Number and percentage of students (graduates and nongraduates) who are employed within a certain time period after leaving the institution.

271 Student success in obtaining preferred first job: Number and percentage of students who received the job of their first choice upon leaving the institution.

272 Occupational Career Choice: Number and percentage of students choosing a particular occupational career (that is, their employment goals).

273 Job Satisfaction: The general satisfaction of former students with their job experiences.

274 First job earnings: Level of earnings of exiting and former students on their first full-time job (35 hours or more a week) after leaving school.

275 Annual total income of former students: Number and percentage of former students who are at a particular annual income level within a certain time period after leaving the institution.

276 Employment in major field of study: Number and percentage of exiting or former students who are employed in a job related to their program of study.

277 Change and Stability of Career Goals: The number and percentage of former students who have maintained or changed their career goals between the time they left the institution and the present time.

278 Enrollment of non-degree and non-certificate seeking students: The number of persons, who are not seeking a degree or certificate (nonmatriculating students), enrolled in regular credit-producing instructional programs or courses, as defined by Subprograms 1.1 and 1.2 in the NCHEMS Program Classification Structure (PCS).

279 Community participation in community education programs: The number of persons, who are not seeking a degree or certificate (non-matriculating students), enrolled in non-credit-producing instructional activities that are offered on or off campus.

280 Community participation in extension services: The number of persons from the community who have participated in cooperative extension service activities as defined by Subprogram 3.3 in the NCHEMS Program Classification Structure (PCS).

281 Educational goals achieved by community participants: The degree of perceived personal improvement and satisfaction with respect to job promotion and salary increase, development of technical skills, leadership and human relations, and other personal attributes among community participants in institutional programs.

282 Institution's participation in community affairs: The number of faculty, staff, and students who participate in various types of off-campus activities in the community, such as workshops, consulting, or giving lectures.

283 Community participation in an institution's social, cultural, and recreational programs: The number of persons from the community who participate in social, cultural, and recreational activities organized and sponsored by an institution for its members and the general public during a specified period of time.

284 Community use of institutional facilities: The number of persons from the community utilizing facilities maintained by the institution such as libraries, language labs, testing centers, computer centers, health services, recreation and athletic facilities, museums, and so forth.

285 Institution's payment of local and state taxes and tax compensation: All local taxes and tax compensation (payment made in lieu of taxes) that an institution pays to local governments (e.g., city, county, state) including school districts, towns, cities, counties, and so forth.

286 Institution's purchase of locally provided utilities: Total amount of dollars expended on utilities (such as gas, electricity, garbage collection, sewage treatment) which were purchased from the local community during a certain time period.

287 Institution's purchase of locally delivered goods and services: Total amount of dollars expended on goods and services that are purchased by the institution from the local community during a certain time period. Goods and services are distinguished from capital equipments generally defined by each institution in terms of dollars and duration (see COMMENTS). Also, goods and services, as referred to here, do not include utilities purchased from the local community (see Outcome Measure K-2).

288 Institution's capital equipment expenditure relevant to the local community: Total amount of dollars expended in the local community by institutions as a result of an institution's capital outlay expenditure. Capital outlay is usually defined in terms of a "good" with the cost exceeding (1) a certain amount of dollars and (2) the duration of useful life of the "good" years. The criteria may vary somewhat among institutions. (See COMMENTS)

289 Institution's capital construction expenditure relevant to the local community: Total amount of dollars expended in the local community by an institution as a result of its capital construction expenditure. The capital expenditures include (1) purchase of land, (2) land improvement, (3) construction (building and parking lot), (4) building repair and improvement, (5) architect's fees, and (6) others that are specifically designated by each institution as "capital construction."

290 Local expenditures by faculty and staff: Total amount of dollars that the faculty and staff in an institution spend in the local community during a certain period of time.

291 Local expenditures by students: Total amount of dollars that students spend in the local community during a certain period of time.

292 Local expenditures by visitors: A total amount of dollars that visitors to an institution spend in the local community during a certain period of time.

293 Yield ratio--percentage of accepted students who actually enroll.

294 Ability levels of entering students--e.g., as measured by SAT scores, high school gpa, number of exceptions to admissions standards.

295 Dependency on community college transfers.

296 Dependency on financial aid.

297 Program preferences of high school seniors.

298 Percent full-time faculty.

299 Percent tenured faculty.

300 Distribution of faculty by rank.

301 Faculty age distribution.

302 Faculty and program trends--the distribution of full-time faculty by teaching fields, and the percent of those in each field who are tenured.

303 Faculty salaries.

304 Faculty with terminal degrees.

305 Graduate/professional school rate of attendance.

306 Patterns of expenditures--trends in the patterns of expenditures in various programs may indicate developing problems in terms of ability to allocate resources to high/low changing priorities.

307 Expenditures by major program area--changes in the percentage of educational budget may indicate areas where mandatory or fixed expenditures are diluting resources in other areas.

308 Salaries as a percent of educational expenditures--may be useful for identifying future problems. For example, an increasing percentage of budget devoted to salaries may indicate that inadequate funds are being devoted to overhead objects such as supplies, equipment, travel, etc. Conversely, a decreasing percentage may jeopardize the ability of the institution to hire sufficient personnel, and/or compensate them adequately.

309 Energy costs as a percent of educational expenditures.

310 Backlog of deferred maintenance.

311 Plant utilization--commonly expressed as the ratio between net assignable square feet and full-time equivalent day students.

312 Occupancy rate of dormitories--reflects on ability to service fixed debts and operation costs.

313 State tuition funding.

314 Private funding.

315 Short-term unrestricted current fund ratio--ratio of unrestricted current fund assets to unrestricted current fund liabilities.

316 Intermediate term available funds ratio--ratio of unrestricted current fund balance plus quasi-endowment market value to educational and general expenditures plus mandatory transfers.

317 Long-term endowment ratio--ratio of endowment market value to educational and general expenditures plus mandatory transfers.

318 Rate of return on endowment--return on investment as a percentage of market value.

319 Payout rate on endowment--earnings used as a percentage of market value at beginning of year.

320 Gifts rate--gifts to endowment as a percentage of market value at beginning of year.

321 Growth rate of expenditures--percentage increase in educational and general expenditures plus mandatory transfers.

322 Debt service to revenue ratio--this ratio measures the flexibility of the institution to commit revenues to resources rather than debt service.

323 Acceptance rate--ratio of acceptances of freshman and transfer applicants to applications.

324 Tenured faculty ratio--ratio of tenured faculty with long-term contracts to FTE faculty.

325 Rejection rates--proportion of applicants actually rejected by the college.

326 Average test scores of entering freshmen--e.g., on SAT, high school GPA, etc.

327 Instruction proportion--ratio of instructional expenditures to educational and general expenditures plus mandatory transfers.

328 Instruction per FTE student--ratio of instructional expenditures to FTE students.

329 Tuition and fee rate per year. A measure of selectivity.

330 Degree and extent to which enterprise operations are spelled out in plans (i.e., preprogrammed).

331 Methodologies, techniques, and tools used in planning and decision making.

332 Employee participation in the planning process.

333 Degree and extent of information distortion in the planning process.

334 Nature, extent, and rate of innovation and risk taking in enterprise operations.

335 Types of strategic performance and control standards used in different areas; e.g., production, marketing, finance, personnel, etc.

336 Types of control techniques used.

337 Degree of centralization or decentralization of authority.

338 Degree of work specialization (division of labor).

339 Spans of control.

340 Basic departmentation and grouping of activities.

341 Extent and use of staff generalists and specialists.

342 Extent and degree of organizational confusion and friction regarding authority and responsibility relationships.

343 Methods used in recruiting personnel.

344 Criteria used in selecting and promoting personnel.

345 Techniques and criteria used in appraising personnel.

346 Nature and uses of job descriptions.

347 Nature, extent, and time absorbed in enterprise training programs and activities.

348 Levels of compensation.

349 Policies and procedures regarding the layoff and dismissal of personnel.

350 Ease or difficulty in dismissing personnel no longer required or desired.

351 Degree and extent of authoritarian versus participative management.

352 Techniques and methods used for motivating managerial personnel.

353 Techniques and methods used for motivating nonmanagerial personnel.

354 Degree and extent of identification that exists between the interests and objectives of individuals, work groups, departments, and the enterprise as a whole.

355 Degree and extent of trust and cooperation or conflict and distrust among personnel of all types.

356 Degree and extent of frustration, absenteeism, and turnover among personnel.

357 Degree and extent of wasteful time and effort, resulting from restrictive work practices, unproductive bargaining, conflicts, etc.

358 Time horizons for plans and planning.

359 Articulation of employee development opportunities.

360 Degree to which the leaders reflect the goals of the organization in their own behavior.

361 Shifts in the socio/economic and ethnic mix of the population of the institution's service area.

362 Changes and fluctuations in labor demand for business, industry, and government located in the college service area.

363 Index of enterprises targeted for subsidies by the federal government.

364 Live births and the demand for teachers.

365 Source of students by geographic area.

366 Occupational trends.

367 Changing student profiles.

368 Student flow from high schools.

369 Trends of student interest in disciplines and professions.

370 Manpower markets.

371 Four-year college offering two-year programs.

372 Average student loads.

373 Amount of uncertainty in obtaining the next budget.

374 Physical environment of the campus.

375 Proportion of total operations budget composed of soft money.

376 Decrease in the number of transfer students from the community colleges.

377 Admission Standards.

378 Hiring from within.

379 Unmet program needs.

380 Program mix and potential clientele.

381 Increasing unit costs.

382 Increasing percentage of faculty are part-time.

383 Percent of faculty teaching outside of their primary fields of specialization.

384 Regular faculty assigned to unusual teaching hours.

385 Institution not staffing at traditional constant dollar rate for additional students.

386 Encouragement of early retirement of faculty and staff.

387 Proportion of faculty with over- or underloads.

388 Period between closing date for application and actual registration data.

389 Drop in application rates for admission.

390 Increasing or decreasing dropout rates.

391 Placement of graduates.

392 Supply, equipment, and travel budgets.

393 Faculty salaries growing disproportionate to the total budget.

394 Application of, or increased fees for support of selective services.

395 Institutional accreditation.

396 Program accreditation.

397 Educational program content--including required major courses, required other courses, elective courses, program admissions requirements, student credit hours, student contact hours, and completion requirements.

398 Description of faculty and staff--including race, sex, appointment status, type of appointment, type of position, rank-titles, tenure status, educational credentials, and professional certification.

399 Description of facilities and equipment--including sizes, age, replacement cost, ownership, condition, uses (e..g, classroom, office facility, study facility, general use, etc.).

400 Description of collections--including physical units, format (e.g., print, microform, manuscript, audiovisual, cartographic, graphic, audio, motion picture, etc.), acquisitions , distributions, etc.

401 Description of revenues--including cash, investments, notes receivable, undrawn appropriations, inventories, as well as other HEGIS-related revenues.

402 Description of liabilities--including notes, bonds, and mortgages payable; deferred revenues, owner equity, as well as other HEGIS-related liabilities.

403 Description of students--including number, race, sex, age, enrollment status, level, geographic origin, educational credentials, objectives, aptitude, etc.

404 Description of demand for instructional services as measured by student credit hours, student contact hours, FTE course enrollment, etc.

405 Measures commonly employed to assess educational climate include Stern's (1970) *College Characteristics Index*, Pace's (1968) *College and University Environment Scales*, Astin and Holland's (1961) *Environmental Assessment Technique*, and Halpin and Croft's (1962) *Organizational Climate Description Questionnaire*. Measures of specific constructs may be found in the BRS-ETSF and MMYD databases. Descriptions of these databases are reported in Appendix 6.

406 Measures commonly employed to assess organizational climate include Hemphill and Westie's Group Dimensions Descriptive Questionnaire, Taylor and Bower's (1972) Survey of Organizations, Stern's (1970) Organizational Climate Index, Litwin and Stringer's (1968) Climate Questionnaire, House and Rizzo's (1972) Organizational Climate Questionnaire. Measures of specific constructs may be found in the BRS-ETSF and MMYD databases. Descriptions of these databases are reported in Appendix 6.

407 Financial independence--dispersion of revenue sources.

408 Revenue drawing power--ability of an institution to attract revenues relative to other similar institutions.

409 Revenue stability--variability of sources of revenue over time. Average standard deviation of each revenue source over time.

410 Reserve strength--average of the net increases or decreases for a given year across fund group

Appendix 5

Criteria Measured By Each Indicator

Indicator ID#	Ref	a	b	c	d	e
1	1	1111				
2	1	1111				
3	1	1112				
4	1	1112				
5	1	1113				
6	1	1113				
7	1	1121				
8	1	1121				
9	1	1122				
10	1	1122				
11	1	1131				
12	1	1131				
13	1	1132				
14	1	1211				
15	1	1211				
16	1	1211				
17	1	1212				
18	1	1212				
19	1	1212				
20	1	1213				
21	1	1213				
22	1	1221				
23	1	1221				
24	1	1221				
25	1	1222				
26	1	1222				
27	1	1222				
28	1	1223				
29	1	1223				
30	1	1224				
31	1	1224				
32	1	1224				
33	1	1225				
34	1	1225				
35	1	1226				
36	1	1226				
37	1	1226				
38	1	1226				
39	1	1227				
40	1	1227				
41	1	1227				
42	1	1228				
43	1	1231				
44	1	1231				
45	1	1231				
46	1	1231				
47	1	1232				
48	1	1232				
49	1	1232				
50	1	1232				
51	1	1233				
52	1	1233				
53	1	1233				
54	1	1234				
55	1	1234				
56	1	1234				
57	1	1234				
58	1	1241				
59	1	1241				
60	1	1242				
61	1	1242				
62	1	1243				
63	1	1243				
64	1	1244				
65	1	1244				
66	1	1251				
67	1	1251				
68	1	1251				
69	1	1252				
70	1	1252				
71	1	1253				
72	1	1253				
73	1	1254				
74	1	1254				
75	1	1255				
76	1	1255				
77	1	1255				
78	1	1256				
79	1	1256				
80	1	1257				
81	1	1257				
82	1	1257				
83	1	1258				
84	1	1258				
85	1	1261				
86	1	1261				
87	1	1262				
88	1	1262				
89	1	1271				
90	1	1271				

Indicator ID#	Ref	a	b	c	d	e
191	2	4400				
192	2	4312				
193	2	4400	4100			
194	2	4200				
195	2	4200				
196	2	1410	4312	4320		
197	2	4320	4312			
198	2	4200	1274			
199	2	1322				
200	2	1331	4200			
201	2	4313				
202	2	4315				
203	2	4315				
204	2	4315				
205	2	4315				
206	2	4315				
207	2	4315				
208	2	4316				
209	2	4316				
210	2	4316				
211	2	4316				
212	2	4316				
213	2	4316	4600	4700		
214	2	4316	4600	4700		
215	2	4316	4600	4700		
216	2	4316				
217	2	4200	4316			
218	2	4320	4316			
219	2	4316	4318			
220	2	4316				
221	2	4316				
222	2	4316				
223	2	4316				
224	2	4311				
225	2	4314				
226	2	4100				
227	2	4100				
228	2	4100				
229	2	4100				
230	2	4314				
231	2	4314	4700			
232	2	4314	4700			
233	2	4314	4700			
234	2	4100	4200	4700		
235	2	4100	4700			
236	2	4311				
237	2	4311				
238	2	4311	4700			
239	2	4311	4700			
240	2	4700				
241	2	4700				
242	2	4311				
243	2	4100				
244	2	4100	4700			
245	2	4100	4700			
246	2	4100	4700			
247	2	4100	4700			
248	2	4100	4700			
249	3	1331				
250	3	1321				
251	3	1321	1322	1323		
252	3	1231				
253	3	1211				
254	3	1231				
255	3	4200				
256	3	4200				
257	3	4200				
258	3	4100				
259	3	4100				
260	3	4320	4400			
261	3	4315				
262	3	4315				
263	3	4400	4600			
264	3	4200	1225			
265	3	4400	2120	1225		
266	3	4400	1227			
267	3	4500	1267			
268	3	1320				
269	3	1231	4400			
270	3	1111				
271	3	1111				
272	3	1111				
273	3	1111				
274	3	1112				
275	3	1112				
276	3	1111				
277	3	1284				
278	3	1421				
279	3	4315				
280	3	1424	4320			
281	3	1424	4320			
282	3	1424	4320			
283	3	1410	4320			
284	3	1411				
285	3	4320				
286	3	4320				
287	3	4320				
288	3	4320				
289	3	4320				
290	3	4320				

Indicator ID#	Ref	a	b	c	d	e
291	3	4320				
292	3	4320				
293	4	4315	4200			
294	4	4315	4200			
295	4	4315	4200			
296	4	4316	4700			
297	4	4315	4700			
298	4	4314	4700			
299	4	4314	4700			
300	4	4314	4700			
301	4	4314	4700			
302	4	4314	4700			
303	4	4600	4700	4314		
304	4	4314				
305	4	4200	4315			
306	4	4316	4700			
307	4	4316	4700			
308	4	4316	4700			
309	4	4316	4700			
310	4	4311	4316	4700		
311	4	4311	4700			
312	4	4311	4316	4700		
313	4	4316	4700			
314	4	4316	4700			
315	5	4316	4700			
316	5	4316	4700			
317	5	4316	4700			
318	5	4316	4700			
319	5	4316	4700			
320	5	4316	4700			
321	5	4316	4700			
322	5	4316	4700			
323	5	4315	4700	4320		
324	5	4314	4700			
325	5	4315	4700	4320		
326	5	4315	4700	4320		
327	5	4318	4700			
328	5	4315	4318	4700		
329	5	4700	4316			
330	6	2100				
331	6	2100				
332	6	2100				
333	6	2100				
334	6	2100				
335	6	2400				
336	6	2400				
337	6	2200				
338	6	2200				
339	6	2200				
340	6	2200				

Indicator ID#	Ref	a	b	c	d	e
341	6	2200				
342	6	2200				
343	6	2500				
344	6	2500				
345	6	2500				
346	6	2500				
347	6	2300				
348	6	2500				
349	6	2500				
350	6	2500				
351	6	2300	3700			
352	6	2300	3500			
353	6	2300	3500			
354	6	2300	3400			
355	6	2300	3600			
356	6	2300				
357	6	2300				
358	6	2100				
359	6	2300				
360	6	2300				
361	7	4700				
362	7	4700				
363	7	4700				
364	7	4700				
365	7	4700	4315			
366	7	4700				
367	7	4700	4315			
368	7	4700				
369	7	4700	4315			
370	7	4700				
371	7	4700	4600			
372	7	4315	4316			
373	7	4316	4600	4700		
374	7	4311	4320			
375	7	4316	4700			
376	7	4315				
377	7	4315	4700			
378	7	4314	4316			
379	7	4318	4700			
380	7	4400	4700			
381	7	4316	4700			
382	7	4316	4700			
383	7	4318				
384	7	4316	4700			
385	7	4316	4700			
386	7	4316	4700			
387	7	4318	4700			
388	7	4700				
389	7	4700				
390	7	4400	4318			

Indicator ID#	Ref	a	b	c	d	e	f	g
391	7	4400	4318	4200				
392	7	4316	4700					
393	7	4316	4700					
394	7	4316	4700					
395	8	4318						
396	8	4318						
397	8	4318						
398	8	4314						
399	8	4311						
400	8	4317						
401	8	4316						
402	8	4316						
403	8	4315						
404	9	3800						
405	9	3100	3200	3300	3400	3500	3600	3700
406	10	4316	4700	4600				
407	10	4316	4700	4600				
408	10	4316	4700	4600				
409	10	4316	4700	4600				
410	10	4316	4700	4600				

Sources of Measures and Indicators

(1) Lenning, Oscar T., Lee Yong S., Micek, Service, Allan L. A Structure for the Outcomes of Postsecondary Education. Boulder, Colo.: National Center for Higher Education Management Systems, 1977.

(2) Wing, Paul, McLaughlin, James N., Allman, Katherine A. Statewide Measures Inventory. Boulder, Colo.: National Center for Higher Education Management Systems, 1975.

(3) Micek, Sidney S., Service, Allan L., Lee, Yong S. Outcome Measures and Procedures Manual. Boulder, Colo.: National Center for Higher Education Management Systems, 1975.

(4) Indicators of Campus Viability: A Report to the Chairman of the Senate Budget and Taxation Committee and House Appropriations Committee. 16 Francis Street, Anapolis, Maryland, 21401: Maryland State Board for Higher Education, December, 1982.

(5) Dickmeyer, Nathan S., and Hughes, K. Scott. Financial Self-Assessment: A Workbook for Colleges. Washington, D.C.: National Association of College and University Business Officers, 1980.

(6) Koontz, H., and O'Donnel, C. Principles of Management: An Analysis of Managerial Functions. San Francisco: McGraw-Hill Book Company, 1972.

(7) Glenny, Lyman A., and Bowen, Frank M. *Signals for Change: Stress Indicators for Colleges and Universities*. *A Report to the California Postsecondary Education Commission*. Sacramento: California Postsecodary Education Commission, 1981.

(8) Christal, Melodie E., and Jones, Dennis P. *A Common Language for Postsecondary Accreditation: Categories and Definitions for Data Collection*. Boulder, Colo.: National Center for Higher Education Management Systems, 1985.

(9) Campbell, John P., Bownas, David A., Peterson, Norman G., and Dunnette, Marvin D. *The Measurement of Organizational Effectiveness: A Review of Relevant Research and Opinion*. San Diego, Calif.: Navy Personnel Research and Development Center, 1974. Copies may also be obtained from the National Technical Information Service, Springfield, Va., 22161: Document AD-786 462.

(10) Collier, Douglas, and Patrick, Cathleen. *A Multivariate Approach to the Analysis of Institutional Financial Condition*. Boulder, Colo.: National Center for Higher Education Managment Systems, 1978.

The BRS AidPage for Mental Measurements Yearbook

BRS Label:
MMYD

Scope:
MMYD contains factual information, critical reviews and reliability-validity information on all 1184 English language tests covered in the Eighth Mental Measurements Yearbook, plus the same content for very recent tests published after the Eighth MMY and included as regular updates to the database.

Producer:
Buros Institute of Mental Measurements
University of Nebraska – Lincoln
135 Bancroft Hall
Lincoln, NB 68588

Contact:
Dr. James Mitchell
402–472-1739

BIBL Paragraphs:
AN, TN, AU, PB, PD

Years of Coverage:
1977 to date, with selected retrospective coverage.

Total Size:
1186 records

Updates:
Monthly

Print Counterpart:
Eighth Mental Measurements Yearbook (and Yearbooks to follow)

Royalties:
$30 per connect hour;
$.75 per item printed offline.

RECORD STRUCTURE KEY

Label	Paragraph	Function[1]	Example
AN	Accession Number	..s	0805–175.an.
OC	Occurrence Table	display	n/a
TN	Test Name	..s	strong adj campbell.tn.
CL	Classification	..s	speech adj hearing.cl.
AU	Author/s	..s	naslund-r$.au.
PB	Publisher	..s	science adj research adj associates.pb.
PD	Publication Dates	..s @ ..l	1976.pd. @pd > = 76 ..l/1 pd < 75
PO	Population	..s	grade$1 with ('9' or '10').po.
LE	Levels	display	n/a
SC	Scores	..s	music adj theory.sc.
AD	Administration	..s	group.ad.
MA	Manual Information	..s	handbook.ma.
RV	Reliability and Validity Data	..s	subscores.rv.
PR	Price	display	n/a
TI	Time Requirements	display	n/a
RE	Reviewers	..s	nichols-r$.re.
CM	Comments	..s	norms with means.cm.
TX	Text	..s	ayres adj space adj test.tx.
RR	Reviews	display	n/a

Sample BRS/MMYD Citations

```
AN   0911-2185
OC   PARAGRAPH    SENTENCE    NS-WORD
       AN (1)         2           2
       AN (1)         4           2
TN   THE LOLLIPOP TEST: A DIAGNOSTIC SCREENING TEST
     OF SCHOOL READINESS.
CL   READING.
AU   CHEW, ALEX L.
PB   HUMANICS LIMITED, 1182 WEST PEACHTREE STREET,
     P.O. BOX 7447, ATLANTA, GA 30309.
PD   1981.
PD   FIRST GRADE. ENTRANTS.
SC   4: IDENTIFICATION OF COLORS AND SHAPES AND COPY-
     ING SHAPES, PICTURE DESCRIPTION AND POSITION AND
     SPATIAL RECOGNITION, IDENTIFICATION OF NUMBERS
     AND COUNTING, IDENTIFICATION OF LETTERS AND
     WRITING.
AD   INDIVIDUAL.
MA   1981, 14 PAGES.
PR   1983 PRICE DATA: 65: PER STUDENT TEST BOOKLET:
     $19.95 PER SPECIMEN SET OF 5 STUDENT TEST
     BOOKLETS, 1 MANUAL AND 1 SET OF STIMULUS CARDS.
     $14.95 PER MANUAL.
TI   (15) MINUTES.
RE   NORRIS, JANET (UNIVERSITY OF NEBRASKA-LINCOLN).
     BECK, ISABEL L. (UNIVERSITY OF PITTSBURGH).
CM   CRITERION-REFERENCED. NO NORMS, PUBLISHER
     RECOMMENDS USE OF LOCAL NORMS.
TX   1 OF 1
     THE LOLLIPOP TEST: A DIAGNOSTIC SCREENING TEST
     OF SCHOOL READINESS. FIRST GRADE ENTRANTS; 1981.
     CRITERION-REFERENCED. 4 SCORES: IDENTIFICATION OF
     COLORS AND SHAPES AND COPYING SHAPES, PICTURE
     DESCRIPTION AND POSITION AND SPATIAL RECOGNI-
     TION, IDENTIFICATION OF NUMBERS AND COUNTING,
     IDENTIFICATION OF LETTERS AND WRITING; NO
     NORMS, PUBLISHER RECOMMENDS USE OF LOCAL
     NORMS. INDIVIDUAL; MANUAL ('81, 14 PAGES);
     STIMULUS CARD BOOKLET ('81, 7 CARDS); STUDENT
     TEST BOOKLET ('81, 8 PAGES); 1983 PRICE DATA: 65: PER
     STUDENT TEST BOOKLET; $19.95 PER SPECIMEN SET OF
     5 STUDENT TEST BOOKLETS, 1 MANUAL, AND 1 SET OF
     STIMULUS CARDS; $14.95 PER MANUAL; (15) MINUTES;
     ALEX L. CHEW; HUMANICS LIMITED.*.
RR   1 OF 16
     ISABEL L. BECK, PROFESSOR OF EDUCATION, UNIT CO-
     DIRECTOR, READING AND COMPREHENSION UNIT
     LEARNING RESEARCH AND DEVELOPMENT CENTER,
     UNIVERSITY OF PITTSBURGH, PITTSBURGH, PA.
     2 OF 16
       THE LOLLIPOP TEST HAS A .86 CORRELATION WITH
     THE METROPOLITAN READINESS TEST (MRT). THIS IS
     IMPORTANT BECAUSE THE STATED PURPOSE FOR THE
     DEVELOPMENT OF THE LOLLIPOP TEST WAS TO DETER-
     MINE IF A DIAGNOSTIC SCREENING TEST OF SCHOOL
     READINESS COULD HAVE CONCURRENT VALIDITY WITH
     A WIDELY USED TEST OF PROVEN PREDICTIVE
     VALIDITY. . . .
     .
     .
     .
     7 OF 16
       IN SUMMARY, THEN, THERE IS NOTHING TO RECOM-
     MEND THE LOLLIPOP TEST IN TERMS OF SPECIFYING
     DISTINCT DEFICIT AREAS ANY MORE THAN THE MRT OR
     OTHER SUCH INSTRUMENTS. IT CAN BE RECOMMENDED
     AS A TEST OF PREDICTIVE VALIDITY, IF ONE WANTS A
     SHORT, EASILY ADMINISTERED, INDIVIDUALIZED IN-
     STRUMENT. FOR TYPICAL CLASSROOM SITUATIONS ONE
     MIGHT BETTER USE THE MRT OR MURPHY DURRELL.
```

```
AN   0815-1052
OC   PARAGRAPH    SENTENCE    NS-WORD
       AN (1)         2           2
       AN (1)         4           2
TN   MINNESOTA SATISFACTION QUESTIONNAIRE.
CL   VOCATIONS.
AU   WEISS, DAVID J.; DAWIS, RENE V.; ENGLAND, GEORGE W.;
     LOFQUIST, LLOYD H.
PB   VOCATIONAL PSYCHOLOGY RESEARCH, N620 ELLIOT
     HALL, UNIVERSITY OF MINNESOTA, 75 EAST RIVER ROAD,
     MINNEAPOLIS, MN 55455.
PD   1963-67.
PO   BUSINESS AND INDUSTRY.
SC   3 OR 21 SCORES: LONG FORM: ABILITY UTILIZATION,
     ACHIEVEMENT, ACTIVITY, ADVANCEMENT, AUTHORITY,
     COMPANY POLICIES AND PRACTICES, COMPENSATION,
     COWORKERS, CREATIVITY, INDEPENDENCE, MORAL
     VALUES, RECOGNITION, RESPONSIBILITY, SECURITY,
     SOCIAL SERVICE, SOCIAL STATUS, SUPERVISION-HUMAN
     RELATIONS, SUPERVISION-TECHNICAL, VARIETY, WORK-
     ING CONDITIONS, GENERAL SATISFACTION; SHORT
     FORM: INTRINSIC, EXTRINSIC, GENERAL.
AD   GROUP.
MA   1967, 130 PAGES.
RV   NO RELIABILITY AND VALIDITY DATA FOR THE 1967
     REVISION OF THE LONG FORM.
PR   1978 PRICE DATA: 10-20: PER TEST (MINIMUM 30-15,
     RESPECTIVELY); MANUAL FREE ON REQUEST; SCORING
     SERVICE AVAILABLE.
TI   (15-20) MINUTES FOR LONG FORM, (5-10) MINUTES FOR
     SHORT FORM.
RE   GUION, ROBERT M. (BOWLING GREEN STATE
     UNIVERSITY).
CM   JOB SATISFACTION. NO NORMS FOR THE 1967 REVISION
     OF THE LONG FORM.
TX   1 OF 12
     MINNESOTA SATISFACTION QUESTIONNAIRE. BUSINESS
     AND INDUSTRY; 1963-67; MSQ; JOB SATISFACTION; 2
     FORMS; MANUAL ('67, 130 PAGES); POSTAGE EXTRA;
     MANUAL FREE ON REQUEST; DAVID J. WEISS, RENE V.
     DAWIS, GEORGE W. ENGLAND, AND LLOYD H. LOFQUIST;
     VOCATIONAL PSYCHOLOGY RESEARCH.*5 A) LONG FORM
     21 SCORES: ABILITY UTILIZATION, ACHIEVEMENT, AC-
     TIVITY, ADVANCEMENT, AUTHORITY, COMPANY
     POLICIES AND PRACTICES, COMPENSATION, COWORKERS,
     CREATIVITY, INDEPENDENCE, MORAL VALUES, RECOGNI-
     TION, RESPONSIBILITY, SECURITY, SOCIAL SERVICE,
     SOCIAL STATUS, SUPERVISION-HUMAN RELATIONS,
     SUPERVISION-TECHNICAL, VARIETY, WORKING CONDI-
     TIONS, GENERAL SATISFACTION; NO RELIABILITY AND
     VALIDITY DATA OR NORMS FOR THE 1967 REVISION; 2
     EDITIONS: ORIGINAL EDITION ('63, 7 PAGES), 1967 REVI-
     SION ('67, 7 PAGES, IDENTICAL WITH ORIGINAL EDITION
     EXCEPT FOR RESPONSE OPTIONS, FOR RESEARCH USE
     ONLY); 20 CENTS PER TEST (MINIMUM 15); SCORING SER-
     VICE, 55 CENTS PER TEST; (15-20) MINUTES. B) SHORT
     FORM: 3 SCORES: INTRINSIC, EXTRINSIC, GENERAL; 1
     FORM ('63, 4 PAGES); 10 CENTS PER TEST (MINIMUM 30);
     SCORING SERVICE, 35 CENTS PER TEST; (5-10) MINUTES.
     .
     .
     .
TX   12 OF 12
       IN SUMMARY, THE MSQ IS WELL DEVELOPED. IT HOLDS
     UP WELL IN COMPARISON WITH A MAJOR ALTERNATE
     INSTRUMENT, AND IT CAN GIVE DETAILED DIAGNOSTICS
     OR PARSIMONIOUS SUMMARY STATEMENTS ACCORDING
     TO AN INVESTIGATOR'S NEEDS. THE ONLY REQUEST THE
     REVIEWER CAN MAKE IS THAT THE NEXT MANUAL BE
     MORE COMPLETE IN DESCRIBING THE REASONING AND
     THE HISTORY BASIC TO IT.
```

BRS

BRS • 1200 ROUTE 7 • LATHAM • NEW YORK 12110 • (518) 783-1161 • TWX 7104444965

BEST COPY AVAILABLE

The BRS AidPage for the Educational Testing Service Test Collection

BRS Label:
ETSF

Scope:
Descriptions, abstracts and availability information on tests, evaluation tools and assessment/ screening devices for measuring skills, aptitude, interests, attitudes or achievement.

Search Aid:
Thesaurus of ERIC Descriptors

Updates:
Quarterly

Producer:
Educational Testing Service
Test Collection
Princeton, NJ 08541

Contact:
Marilyn Halpern
609–734-5737

Document Delivery:
Availability information is included with each record

BIBL Paragraphs:
AN,TI,AU,AV,YR

Years of Coverage:
Both current and older assessment devices

Total Size:
Approximately 5000 records as of November 1983

Connect Hour Royalty:
$25

Online Per Citation Charges:
Free Paragraphs: AN,DT,AU,YR, DE,SW,RT,ID,GL,TG,NT
$.53: TI,AV,AB

Offline Per Citation Charges:
Free Paragraphs: AN,DT,AU,YR, DE,SW,RT,ID,GL,TG,NT
$.50: TI,AV,AB

RECORD STRUCTURE KEY

Label	Paragraph	Function	Example
AN	Accession Number	..s @	tc011945.an. 8309.an. @tc = 011945
UP	Update Code	..s @ ..l	8309.up. @up = 8309 ..l/1 up = 8309
TI	Title	..s	pre adj algebra.ti.
DT	Subtests	..s	anxiety same aggression.dt.
AU	Author	..s	harris-david-p.au. harris.au. educational adj testing service.au.
YR	Year	..s @	80.yr. @yr > 79
DE	Descriptors	..s	speech-skills.de. speech adj skills.de.

Label	Paragraph	Function	Example
SW	Single Word Descriptors	..s	numbers.sw.
RT	Resource Type	..s	assessment.rt.
ID	Identifiers	..s	purdue with inventory.id.
AV	Availability	..s	western adj psychological.av.
GL	Grade Level	..s	(k '1' '2').gl.
TG	Target Audience	..s	('16' '17').tg adults.tg.
NT	Notes	..s	iowa with test$.nt.
AB	Abstract	..s	visually adj impaired.ab

BEST COPY AVAILABLE

Sample BRS/ETSF Citations

AN ACCESSION NUMBER: TC011945 ETS 8309.
TI TITLE: MISSOURI OCCUPATIONAL PREFERENCE INVENTORY.
AU AUTHOR: MOORE-EARL; AND OTHERS.
YR YEAR: 80.
DE DESCRIPTORS: ADOLESCENTS. ADULTS. CAREER-CHOICE. CAREER-COUNSELING. COLLEGE-STUDENTS. HIGHER-EDUCATION. HIGH-SCHOOLS. HIGH-SCHOOL-STUDENTS. INTEREST-INVENTORIES. VOCATIONAL-INTERESTS.
RT RESOURCE TYPE: ASSESSMENT/SCREENING INSTRUMENT.
ID IDENTIFIERS: CARD SORT: MOPI.
AV AVAILABILITY: HUMAN SYSTEMS CONSULTANTS; 110 NORTH TENTH STREET, COLUMBIA, MO 65201.
GL GRADE LEVEL: 9; 10; 11; 12; HIGHER EDUCATION.
TG TARGET AUDIENCE: AGE 13–64.
NT NOTES:
TIME: 60; APPROX.
AB ABSTRACT: USED TO ASSIST INDIVIDUALS IN EXPLORING CAREER OPTIONS, UNDERSTANDING REASONS BEHIND OCCUPATIONAL CHOICES, AND IN IDENTIFYING NEXT STEPS TO GUIDE FURTHER EXPLORATION. ADAPTABLE TO MANY COUNSELING AND CAREER EXPLORATION SITUATIONS, A VARIETY OF WORK SETTINGS, AND NEEDS OF VARIOUS POPULATIONS. THERE ARE THREE FORMATS IN WHICH TO USE MOPI: SELF GUIDED APPROACH WHICH INVOLVES USING THE CARDS AS A RESOURCE FILE; SELF DIRECTED CARD SORT IN WHICH INDIVIDUAL ASSUMES RESPONSIBILITY FOR CAREER EXPLORATION; AND COUNSELOR DIRECTED CARD SORT WHICH PROVIDES FOR IN-DEPTH CAREER EXPLORATION AND PLANNING WITH HELP FROM A COUNSELOR.

AN ACCESSION NUMBER: TC922001 ETS 8309.
TI TITLE: COGNITIVE ORIENTATION QUESTIONNAIRE OF CURIOSITY.
DT SUBTESTS: BELIEFS ABOUT SELF; GENERAL BELIEFS; BELIEFS ABOUT GOALS; BELIEFS ABOUT NORMS.
AU AUTHOR: KREITLER-SHULAMITH. KREITLER-HANS.
YR YEAR: 74.
DE DESCRIPTORS: ATTITUDE-MEASURES. ATTITUDES. BEHAVIOR. COGNITIVE-STYLE. CURIOSITY. FOREIGN-COUNTRIES. INDIVIDUAL-TESTING. PRIMARY-EDUCATION. SELF-CONCEPT. YOUNG-CHILDREN.
RT RESOURCE TYPE: ASSESSMENT/SCREENING INSTRUMENT.
ID IDENTIFIERS: ISRAEL; TIM(D).
AV AVAILABILITY: TESTS IN MICROFICHE. TEST COLLECTION, EDUCATIONAL TESTING SERVICE, PRINCETON, NJ 08541.
TG TARGET AUDIENCE: AGE 4–8.
NT NOTES:
ITEMS: 73.
AB ABSTRACT: TEN PART QUESTIONNAIRE DESIGNED TO ASSESS BELIEFS THAT MAY ORIENT A CHILD TOWARD BEHAVIOR IDENTIFIED AS CURIOSITY. THE 73 ITEMS REFER TO FOUR BELIEF TYPES: NORMS, GENERAL BELIEFS, BELIEFS ABOUT SELF, AND GOALS. RESPONSES ARE SCORED IN TERMS OF THREE CATEGORIES: PROCURIOSITY ORIENTATION, ANTICURIOSITY ORIENTATION, AND INDETERMINATE POSITION. BASIC FORM IS ALTERED TO SUIT BOYS OR GIRLS. INDIVIDUALLY ADMINISTERED.

AN ACCESSION NUMBER: TC830288 ETS 8309.
TI TITLE: CLARKE PARENT/CHILD RELATIONS QUESTIONNAIRE.
DT SUBTESTS: MOTHER'S AGGRESSION TO SUBJECT; FATHER'S AGGRESSION TO SUBJECT; SUBJECT'S AGGRESSION TO MOTHER; SUBJECT'S AGGRESSION TO FATHER; MOTHER'S AGGRESSION TO FATHER; FATHER'S AGGRESSION TO MOTHER; MOTHER'S COMPETENCE; FATHER'S COMPETENCE; MOTHER'S AFFECTION; FATHER'S AFFECTION; MOTHER'S STRICTNESS; FATHER'S STRICTNESS; MOTHER IDENTIFICATION; FATHER IDENTIFICATION; MOTHER'S INDULGENCE; FATHER'S INDULGENCE; DENIAL (MOTHER); DENIAL (FATHER).
AU AUTHOR: PAITICH-DANIEL.
YR YEAR: 76.
DE DESCRIPTORS: ADULTS. AFFECTION. AGGRESSION. ATTITUDE-MEASURES. CHILDHOOD-ATTITUDES. FOREIGN-COUNTRIES. INTERPERSONAL-RELATIONSHIP. PARENT-CHILD-RELATIONSHIP. PARENT-ROLE.
RT RESOURCE TYPE: ASSESSMENT/SCREENING INSTRUMENT.
ID IDENTIFIERS: CANADA; PCR; TIM(D).
AV AVAILABILITY: TESTS IN MICROFICHE. TEST COLLECTION, EDUCATIONAL TESTING SERVICE, PRINCETON, NJ 08541.
G TARGET AUDIENCE: ADULTS.
NT NOTES:
ITEMS: 131.
AB ABSTRACT: DESIGNED TO SAMPLE THE CONTENT AREAS OF PARENT-CHILD RELATIONS THAT HAVE BEEN FOUND SIGNIFICANT IN CLINICAL RESEARCH. INCLUDES 18 SCALES DEALING WITH AGGRESSION, COMPETENCE, AFFECTION, STRICTNESS, IDENTIFICATION, INDULGENCE, DENIAL.

AN ACCESSION NUMBER: TC007289 ETS 8309.
TI TITLE: IOX OBJECTIVES-BASED TEST COLLECTIONS-LANGUAGE ARTS: MECHANICS AND USAGE, KINDERGARTEN-GRADE 6.
DT SUBTESTS: CAPITALIZATION AND PUNCTUATION USING COMMAS; PLURAL NOUN FORMS; POSSESSIVE FORMS; PRONOUN FORMS; MODIFIERS; VERB AGREEMENT; IRREGULAR VERBS; COMMONLY CONFUSED WORDS.
AU INSTITUTIONAL AUTHOR: INSTRUCTIONAL OBJECTIVES EXCHANGE, LOS ANGELES, CALIF.
YR YEAR: 73.
DE DESCRIPTORS: CRITERION-REFERENCED-TESTS. ELEMENTARY-EDUCATION. ELEMENTARY-SCHOOL-STUDENTS. GRAMMAR. ITEM-BANKS. KINDERGARTEN-CHILDREN. LANGUAGE-SKILLS. SPEECH-SKILLS. WRITING-SKILLS.
RT RESOURCE TYPE: ASSESSMENT/SCREENING INSTRUMENT.
ID IDENTIFIERS: INSTRUCTIONAL OBJECTIVES EXCHANGE; IOX.
AV AVAILABILITY: INSTRUCTIONAL OBJECTIVES EXCHANGE; BOX 24095-M, LOS ANGELES, CA 90024.
GL GRADE LEVEL: K; 1; 2; 3; 4; 5; 6.
NT NOTES: SEE ALSO IOX MEASURABLE OBJECTIVES COLLECTIONS: LANGUAGE ARTS-MECHANICS AND USAGE, K-12 (TC006959).
AB ABSTRACT: ASSESSES SKILLS IN MECHANICS AND USAGE OF STANDARD ENGLISH. AREAS INCLUDE CAPITALIZATION, PUNCTUATION, ABBREVIATION, HYPHENATION, BIBLIOGRAPHIC FORM, PLURALS, POSSESSIVES, PRONOUN REFERENCES, SUBJECT-VERB AGREEMENT, IRREGULAR PAST PARTICIPLES AND COMMONLY CONFUSED WORDS. FORMS A AND B ARE CONTENT PARALLEL. EACH CONSISTS OF THIRTY-EIGHT TESTS ON FORTY-ONE SPIRIT MASTERS.

BRS

BRS • 1200 ROUTE 7 • LATHAM • NEW YORK 12110 • (518) 783-1161 • TWX 7104444965